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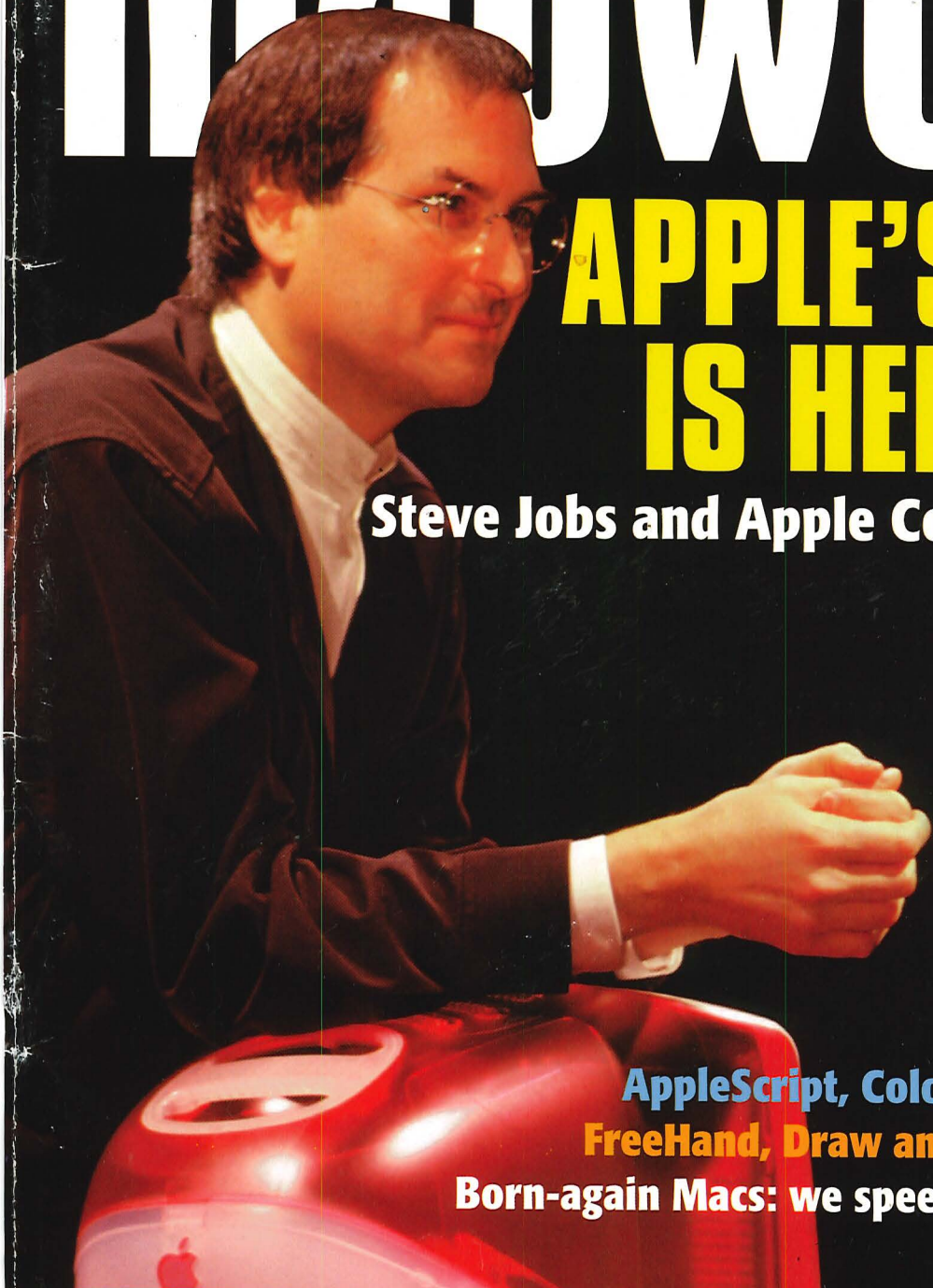

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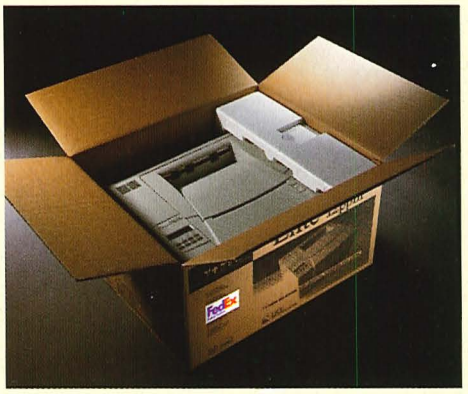

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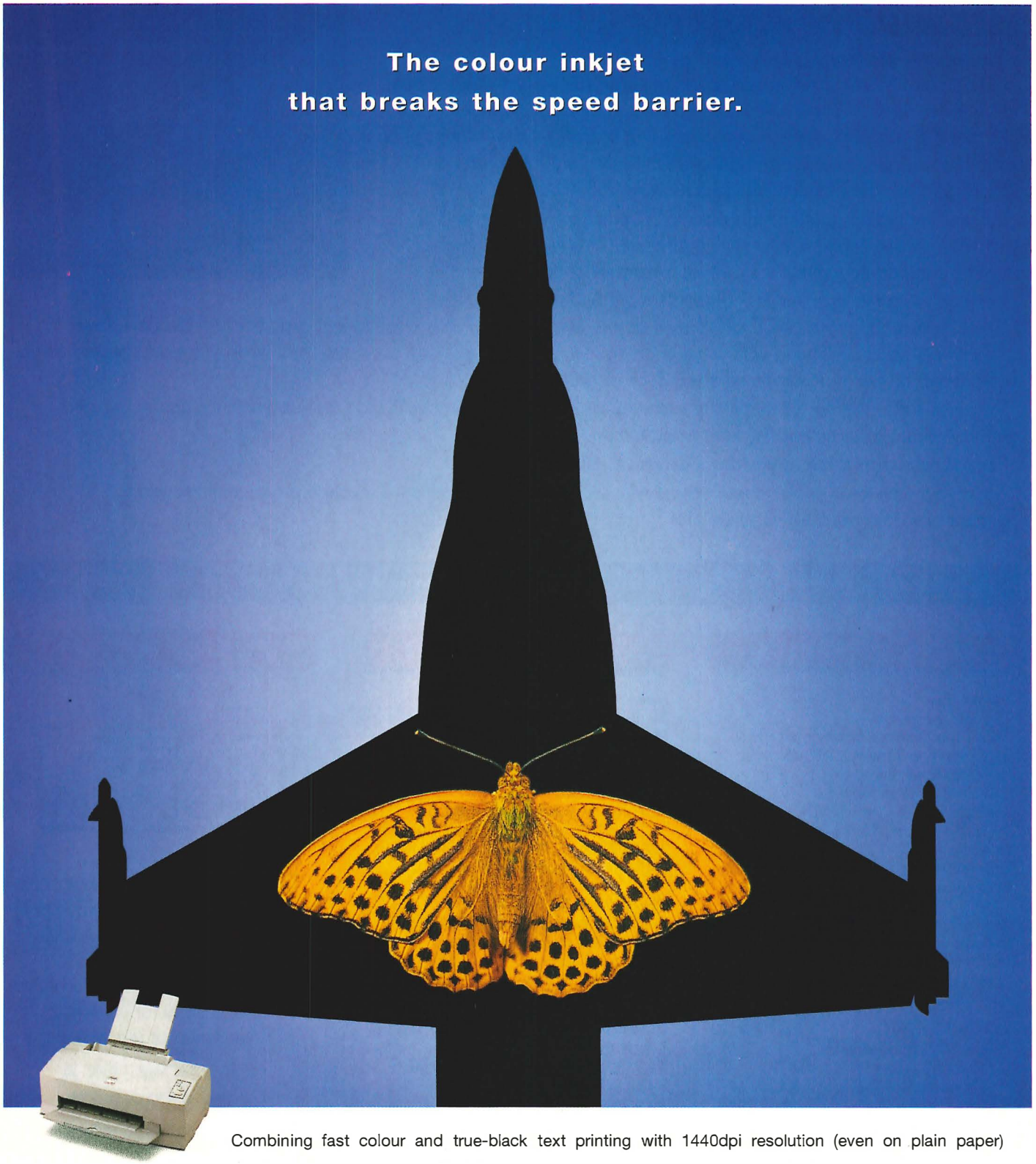

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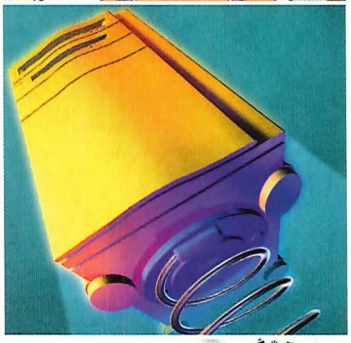

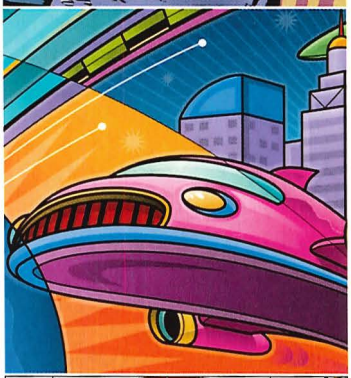

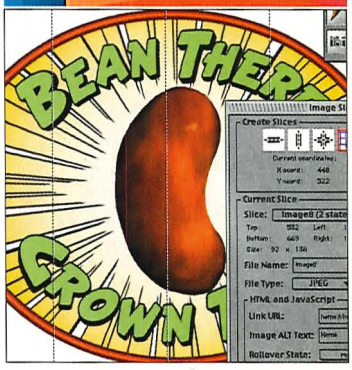

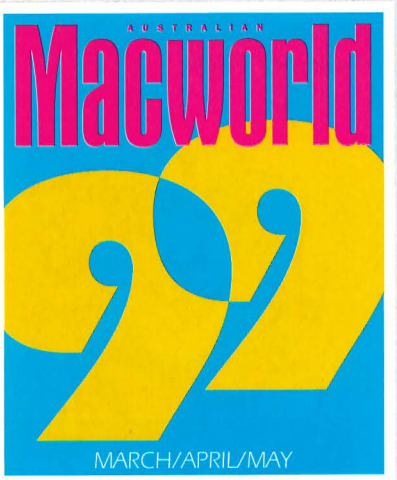

COMING SOON

School network administration
We name the biggest frustrations facing school network administrators, and show how to solve them using a Mac.

Bulls and bears
We show you how to organise your portfolio, trade your shares and predict their future movements, using a Mac, a modem and some canny software.

Running WebObjects on your Mac
WebObjects 4.0 runs on Mac OS X Server, the first commercial version of Rhapsody. This feature will explore the power of WebObjects, the new features of version 4.0, and the steps one must follow in order to use the system on Power Macintosh hardware running Mac OS X Server.

High-speed access
56Kbps modems are not the be-all and end-all of internet access. We track the high-speed access technologies that are set to enter Australia (ASDL), have become more affordable of late (ISDN), or are predicted to become far more popular (cable). For each, we ask: Where's it going? And, how do use it with my Mac?

All forward listings are subject to change without notice.

BEHIND THE COVER

Cover photography by Robert Houser.

EDITORIALLY SPEAKING

Who are you?

The one thing that the readers of *Australian Macworld* have in common is that your interest in your Macs is so great that you wish to read an Australian print monthly on the matter.

Everything else is up for grabs. Industry, skill level, everything. That's why we included a readers' survey in November 1998 issue. Here's the results:

The majority of *Australian Macworld* readers have internet access. Three-quarters are connected at work, and three-quarters are connected at home. This is far ahead of the national average: less than 20 percent of households were connected in August 1998, according to the Australian Bureau of Statistics. Perhaps this is one of several reasons why the AusMac Archive <www.ausmac.net>, home to the online edition of Off the Net (page 34), was setting and breaking new download records through late 1998. At least three-quarters of our readers can easily download the software discussed in this column.

Some *Australian Macworld* readers are generous with their property, or are responsible for spreading information through large organisations: the average copy of the magazine is read by 5.5 people, although most copies are read by one or two.

A quarter of readers work in education and another quarter in the publishing and design industries, with unspecified government and private services picking up much of the rest.

And, while readers' interests ranged from the expected (education, publishing, internet) to the esoteric (music, CAD, scientific software), the strongest calls were for more stories on the main game: more major news reports on significant new developments (see page 13), more reviews of fundamental Macintosh hardware options (see page 36), and more tips on using Mac OS (see page 26).

In response to the previous readers' survey (May 1997), we deleted two less frequently read sections, which enabled us to launch one frequently requested column (Education) while also filling up on extra news, features and reviews. This follow-up survey will help us further tweak our content to best meet the needs of readers, so I'd like to thank all those who took the time to complete and return the form.

I'd also like thank Netspace Online Systems <www.netspace.net.au>, which sponsored the survey by giving away 10 free six-month internet accounts. The lucky winners were Stephen Goldie, of Bangor, New South Wales; Anthony Hubble, of Duncraig, West Australia; Paul Grey, of Midway Point, Tasmania; Murray Price, of Kingston, Tasmania; Edward Kwan, of Randwick, New South Wales; Michael Noonan, of Summer Hill, New South Wales; John Saunders, of Rostrevor, South Australia; Rob Lennie, of View Bank, Victoria; Jonathon Wever, of East St Kilda, Victoria; and Stan Fitzpatrick, of Mt Gravatt, Queensland.

Steven Noble,
Editor.

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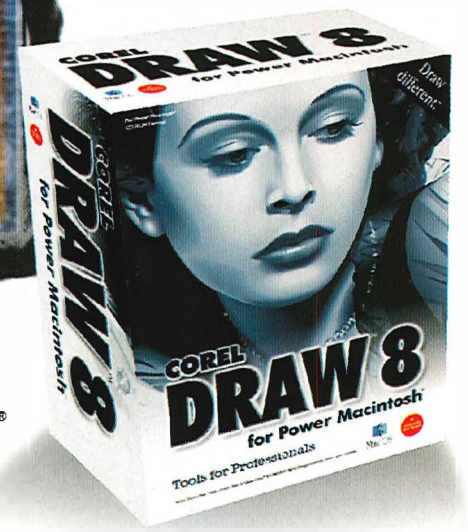

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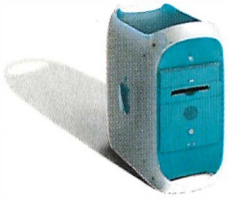

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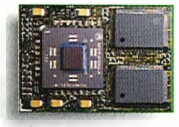

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February 1999
Issue No. 14

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The case of the incredible peeling PowerBook

In June 1997 I purchased a G3 PowerBook. I was content with the machine until a couple of days ago, when I noticed what I believed to be a speck of dust on the base of the machine under the latch. When I wiped the 'speck' gently with my finger, the black paint started peeling off, down to bare metal.

I rang AppleCare myself and was given short shrift. Bluntly, I was told it wasn't covered, and—basically—they didn't want to know about it. Also, they intimated that I had caused the damage.

This machine is in pristine condition—apart from where the paint is peeling—and has been treated with TLC since purchase and only moved in the provided Apple aluminium case. But to handle this 'portable' computer further will mean more paint shedding and my 'investment' of $7000 deteriorating rapidly. The AppleCare person's attitude was that I could complain all I liked—and write to her department head—but the decision would stand.

This long-time Apple fan is disgusted and very disillusioned.

Brian Cassey
Cairns, QLD

Ed: We passed your letter onto Myrna Van Pelt, corporate affairs manager with Apple Computer Australia, who provided us with the following response:

Apple is very concerned at Mr Cassey's experience with his G3 PowerBook. The PowerBook G3 is executed with the most rigorous quality standards and we have therefore escalated Mr Cassey's concerns to the highest level of our engineering division in Australia. User response to the G3 PowerBook has been very positive and the shedding paint, which Mr Cassey referred to, is highly unusual.

Apple is eager to fly the unit to Sydney to physically evaluate its condition. This was conveyed to Mr Cassey during his conversation with AppleCare. However, Mr Cassey indicated that he was unable to provide the machine for inspection.

AppleCare representatives have been meticulously trained to provide conciliatory user technical guidance and support to all Apple customers. Following our investigation of the matter, it is clear that the representative who spoke with Mr Cassey handled the call in a professional manner, working with Mr Cassey in an attempt to secure the best solution for him.

In retrospect, we do not provide a warranty for wear and tear, and cannot consider that Mr Cassey's experience constitutes a fault. Similarly, we recognise that Mr Cassey's issue, while distressing for him, is not one that impedes his work in any way. As the machine continues to operate in 'pristine condition', as indicated by Mr Cassey himself, we can only again extend our offer to send the unit to our headquarters in Sydney, at his convenience, for further diagnosis and a fair evaluation of the situation.

Apple's computer and video monitor

I read with great interest the article on flat-panel displays in *Australian Macworld* (December 1998, pages 52–56) and have a few comments to add.

One of the main reasons I chose the Apple Studio Display was because it could function as a video monitor as well as a computer display, a fact that was not mentioned—even in passing—in the description or table in the article.

It is ideal for applications such as this as it allows users to swap between full-screen and monitor modes while keeping the footprint of the system small.

Having said that, the Studio Display seems to have some problems with the video circuitry. This may be PAL related, as the problem manifests itself when you switch to video input and get incorrect colours.

Also, the buttons on the bottom of the display are inaccessible when using the desktop stand.

Further, frequent crashing renders all the buttons useless (including the reset button), and points to a product that is just a little too like a beta version of the real thing.

In all other respects, the Apple Studio Display is excellent, a truly beautiful product. I for one cannot look at a CRT display with the same eyes again, but there are some issues that Apple needs to reflect upon to make the product mature.

Simon Leadley
Trackdown Digital Studios, NSW

Letters to the editor should be emailed to

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Letters of less than 200 words are given preference.

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Umax: SuperMac C700 & S900.

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MacNews

EXHIBITIONS

Apple colours Macworld Expo

It's San Francisco, January 5. A bus drives past some of 70,000 Mac-o-philes, each trying to cram his or her way into the Moscone Convention Center. The rear of the.bus carries a single word, 'yum', in metre-high type. It's surrounded by pictures of a few dozen iMacs, each coloured strawberry, lime, blueberry, tangerine or grape.

On January 4, this ad was not on the road. On January 4, the only people who'd seen these fruit-flavoured iMacs had checked their kneecaps at the door as security. By 11am January 5, however, Apple cofounder and interim CEO Steve Jobs had given his keynote speech to 1999's San Francisco Macworld Expo, revealed this splash of colour, Mac OS X Server, and a new Power Macintosh G3 computer.

Revision three

"Imagine if we all had to live in the same coloured house," said Jobs, "imagine if we all had to drive the same coloured car." To some, adding fruit flavours to the iMac may seem lightweight, but to CNN, PBS, the *San Francisco Chronicle* and the stockmarket, it was very big news indeed. Media coverage was widespread and favourable, and Apple's share price peaked at more than $US45 during the expo.

PHOTOGRAPHY: ROBERT HOUSER

Apple interim CEO Steve Jobs announcing Mac OS X Server during his keynote speech, Jan 5.

These systems were altered in more tangible ways as well. First, they now sell in Australia for $2545. That's $150 less than the previous 'Bondi Blue' models. Second, the clock on their G3 processors has been cranked up to 266MHz and their IDE hard disks now store 6GB. Third, the infrared port has gone, as has the hidden 'mezzanine' slot, about which Apple would say little more than "don't use it".

The new iMacs should be available in AppleCentres throughout Australia by the time you read this, according to Ben Bowley, marketing manager with Apple Computer Australia. The older Bondi Blue iMacs should be completely sold out.

In Australia, there has been significant market acceptance of the iMac, according to Bernard Esner, an analyst with research company IDC Australia. Apple's share of Australia's total PC market rose from 3.7 in the second quarter of 1998 to 5.5 percent in the third, Esner said (measured as units shipped). Further, Apple's ranking as a PC vendor in Australia rose from seventh to sixth in this period. Globally, 800,000 iMacs had been sold by the day of keynote, Jobs said—that's one every 15 seconds.

Open wide

While the iMacs captured the most attention, it was with its Power Macs and system software that Apple made the greatest technological leaps.

The new Power Macintosh G3 comes in four workstation and two server configurations, each in the same revolutionary new minitower chassis.

Four moulded handles make for easy carrying, and the two handles on the bottom double as feet. Lifting a single, lockable catch opens the box, laying everything—the three 64-bit PCI slots; the dedicated graphics PCI slot; the four DIMM slots, which take up to 1GB of RAM; and ☞

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Steve Jobs and the new G3—open wide and come inside.

FOR THE RECORD

Contrary to our review (Dec 1998, p77), Graphisoft's **ArchiCAD 6.0 works with most laptops**. There are also network-based site-licence dongle work arounds for iMac (USB-port-only) use.

ArchiCAD 6.0 is a leading architectural computer-aided design program. It is distributed in Australia by Archigraph, which can be reached on 02 9460 9500, fax 02 9940 9501 and <www.archigraph.com.au>.

Contrary to our review (Jan 1999, p69), Macworld Lab did not test the ix3D Road Rocket. Rather, it tested the ix3D Mac Rocket, a product which is **not sold through Australian retail outlets**. The Road Rocket, which was not tested, is a $791 ($648 ex-tax) card which fits into the CardBus slot of a G3 PowerBook, providing 128-bit graphics acceleration. It is distributed by Macsimise, which can be reached on 03 9521 4877, fax 03 9521 4977 and <www.macsimise.com.au>.

the two expansion bays—flat and in clear view. The case is made of translucent and blue plastic, similar to that of the original iMac. On its side is a huge white Apple logo and two watermarked characters: *G* and *3*.

On the front are both restart and programmer-reset buttons. Above them is the 24x CD-ROM or 5x DVD-ROM drive, as well as the optional 100MB Zip drive. There is no built-in floppy drive.

At the back are two FireWire ports running at 400Mbps—twice the speed of Apple's FireWire kit for the original Power Macintosh G3s. This was the first time that any PC had come with a FireWire controller built into the motherboard, said Peter Blasina, editor of *Australian Video Camera* magazine. Further, the new G3 comes with software plug-ins that FireWire-enable standard video-editing programs such as Premiere.

Jobs said new products for FireWire would come to market quickly, as was already happening for USB. In fact, Apple is so confident of the future of FireWire—which can carry up to 63 devices, is hot pluggable, and requires no termination or configuration—that it built no SCSI controller into the motherboard of the new G3. SCSI is available in one of the workstation configurations and in both servers, but it is provided by a PCI card rather than an onboard controller. In its other configurations, the new G3 comes with an Ultra ATA rather than SCSI hard disk.

Also on the back of the new G3 is two USB ports running at 12Mbps, like the iMac. The new G3 also features an ADB port, for connecting older mice, keyboards, joysticks and graphics tablets. It ships with the same round USB mouse and smaller keyboard as does the iMac. Gone are old-style Macintosh serial ports.

Also on the back is an RJ-45 jack that supports 10- and 100BaseT Ethernet. Built-in analogue audiovisual in-and/or-out on the new G3 is limited to VGA video and 16-bit audio.

Keep the rage

One of the snazziest features of the new G3 is its video subsystem, which consists of a Rage 128 2D and 3D graphics acceleration card from ATI Technologies backed by 16MB of graphics RAM. Jobs said this 128-bit acceleration system was faster than the Voodoo2 card which most PC gamers added to their computers.

Bolstering Apple's move to bring powerful 3D graphics to the mainstream was its announcement that it had licensed OpenGL and would include it in future versions of Mac OS. OpenGL is a powerful and widely used software 'library' for 3D graphics, created by Silicon Graphics.

During the keynote, Jobs handed the reigns to iD Software gaming guru John Carmack, who lauded Apple's support for Rage 128 and OpenGL. He demonstrated iD's in-development game, Quake 3: Arena, saying it contained just 15K of Mac-specific code, and would ship for Mac OS and Windows simultaneously.

Dollars and sense

The new G3 would be shipping here by late January, said Bowley. The $3495 workstation model would be clocked at 300MHz, and feature 64MB of RAM, a 6GB hard disk, a CD drive and 512K of backside L2 cache. For $4495, the clock moves up to 350MHz, the cache up to 1MB, and there's a DVD drive.

Unlike the PowerBook DVD Video Kit, which does not yet play the DVD video titles that are sold in Australia, the DVD drive in this Power Mac G3 would be truly international, said Andrew Rallings, national systems engineering manager with Apple Computer Australia. The user would assign a region to the DVD decoder—an Apple-made daughtercard attached to the ATI's Rage 128 card—at first use. In keeping with international agreements, there would be a limit on how many times the user could reassign the region which the drive would support, said Rallings. A further two workstation models, clocked at 350 and 400MHz, would sell for $5495 and $10,995, Bowley said. Both would include 128MB of RAM and 1MB of cache. The former would include a 12GB hard disk and a built-in Zip drive. The later would feature an Ultra2 SCSI PCI card and a 9GB Ultra2 SCSI hard disk.

Serve it up

The new G3 is also available in two server configurations, both of which include a four-port PCI Ethernet card as well as AppleShare IP 6.1, Apple Network Assistant 3.5 (ten-client licence) and SoftRAID 2.5.1. Further, both servers are configured with 1MB of cache and an Ultra2 SCSI card.

The 350MHz model, selling for $7295, comes with 128MB of RAM and one 9GB Ultra2 SCSI hard disk. The 400MHz model, selling for $10,995, comes with 256MB of RAM and two such hard disks.

The hottest news on the server front, however, was not hardware. It was software—a whole new operating system in fact, Mac OS X Server. It would become available in Australia this quarter, Bowley said, with a one-server unlimited-client licence costing $1595. It would also be sold in a bundle with a server configuration of the new G3.

Mac OS X Server is designed to run on regular Power Macintosh G3 hardware, but includes many features normally associated with Unix systems. Unlike the forthcoming release, to be called Mac OS X, this initial Server version does not run most Macintosh software. Rather, it comes bundled with two high-performance internet-server products—Apache 1.3.3 and WebObjects 4.0—that have been ported to Mac OS X Server. Further, Tenon and Canto are among the major makers of server software that have ported their internet or publishing products to the new platform.

(continued page 17)

UPGRADE CARDS

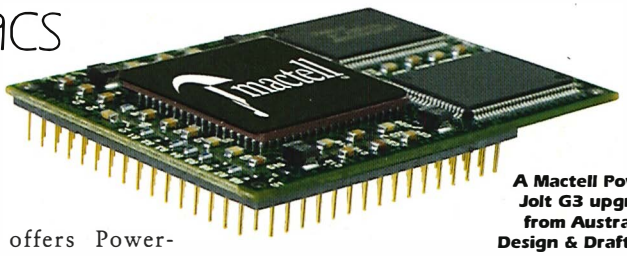
G3 upgrades for G3 Macs

Everyone wants more speed, even owners of early G3 Power Macs. A new batch of processor-upgrade cards promises performance boosts for G3s running at 233MHz, 266MHz, 300MHz, 333MHz and 366MHz.

Mactell' PowerJolt OverDrive upgrade cards, from Australian Design & Drafting (02 9810 2422, fax 02 9810 0422), are available in 300MHz, 333MHz, 366MHz and 400 MHz versions with several cache options. At press time, prices ranged from $1657 to $2507, inc tax.

Newer Technology's MAXpowr line of processor upgrades, from Lidcam Technology (03 9820 9077, fax 03 9866 1245), now includes 333MHz, 366 MHz and 400MHz cards for G3 Power Macs. Newer also planned to offer, by the time you read this, processor upgrades for older Power Macs, including the 7000, 8000 and 9000 series, and for models from popular clone vendors, including Power Computing, Motorola and APS Technologies.

Music Technology (02 9369 4990, fax 02 9387 8676) also offers PowerLogix's 333MHz, 366MHz and 400MHz upgrade cards with various cache speeds.



A Mactell PowerJolt G3 upgrade from Australian Design & Drafting.

And Macsimise (03 9521 4877, fax 03 9521 4977) has announced three upgrade cards in Sonnet Technologies' Crescendo G3 series, also running at 333MHz, 366MHz and 400MHz.

— *Allyson Bates*

REMOVABLE STORAGE

Microtech shrinks the USB Zip

Bits has announced the Australian release of Microtech's slim version of Iomega's Zip drive, which has been built for USB systems such as the iMac.

According to Bits, the $399 Mil Zip 100 USB takes standard 100MB Zip disks (Iomega has 100MB and 250MB versions). It weighed just 312g, the company said, and was the "world's smallest Zip drive". The unit was also available in a $399 PC Card version for use with certain PowerBooks, the company said.

Bits can be reached on 02 9310 3199, fax 02 9310 4199 and <www.bits.com.au>.

— *Steven Noble*

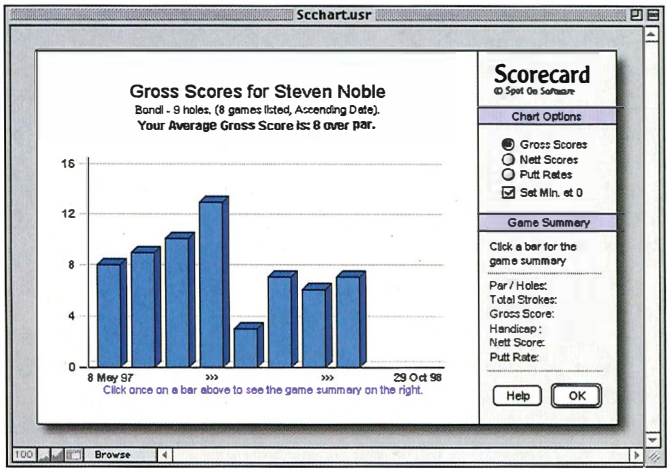
The Mil Zip 100 USB is "the world's smallest Zip drive", and it's for iMacs.

ENTERTAINMENT

Software—fore!—golfers

If you think a birdie's better than a bogey and an eagle's best of all, then Sydney-based software developer Spot On Software would like to sell you its latest product, Scorecard.

The program contains fields for charting every round you play, by hole, course, date and other factors. The results are extensively charted, so the user can track his or her progress.



One of the many charting options provided by Scorecard.

Scorecard requires Mac OS 7.6 or later, a 68030 or later processor (a PowerPC processor recommended), a CD-ROM drive (unless downloaded from the internet), a display supporting at least 256 colours, at least 8MB of RAM (16MB or more recommended), and 8MB of free hard disk space.

Scorecard is $29.95 through golf retailers. Spot On Software can be reached on 1300 363 193, and a demonstration version is available at <www.spot-on.com.au>.

— *Steven Noble*

NEWS BRIEF

On January 15, Apple chief financial officer Fred Anderson reported the company's fifth consecutive quarter of profitability.

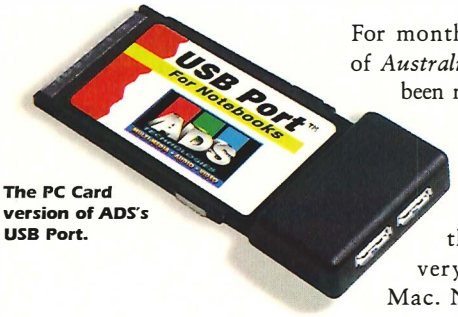
As is usual for Apple, the company reported no financial specifics for Australia. However, Apple did say that countries outside the United States accounted for about 47 percent of all sales.

Apple's profit for this quarter, which ended 26 December 1998, was $US152. This was up from $US47 for the same quarter last year, which marked the company's return to the black.

Revenues were up by eight percent on the year-ago quarter, and unit sales up by 49 percent—an indication that the company is not just financially secure, but is also growing. Much of this growth came from the sale of 519,000 iMacs during the quarter.

PERIPHERAL CONNECTIVITY

USB for PCI and PC Card Macs



The PC Card version of ADS's USB Port.

For months, the news pages of *Australian Macworld* have been replete with products designed to connect to USB ports, which are found on only two kinds of Mac: the iMac, and the very latest G3 Power Mac. Now, Conexus has announced the Australian release of ADS's USB Port, an adaptor which could let users connect these devices to a wider range of Macintosh systems.

The USB Port provides two USB connectors, and is available in two versions: a $126 version for 32-bit Type II PC Card slots, such as those found in the latest G3 PowerBooks; and a $199 version for PCI slots, such as those found in most PowerPC-based Macs released over the last few years.

Conexus can be reached on 02 9975 2799, fax 02 9975 2966 and <www.conexus.com.au>.

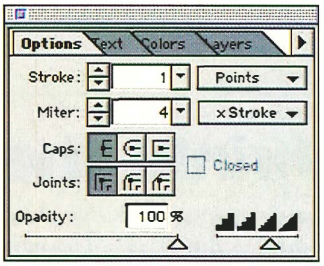
—Steven Noble

GRAPHICS & DESIGN

Drawing tools for Photoshop

PICA Software has announced the Australian release of PhotoGraphics 1.0, Extensis's plug-in which provides Adobe Photoshop with vector-drawing tools.

Vectors are the mainstay of drawing program such as Adobe Illustrator, Macromedia Freehand, CorelDRAW and Deneba Canvas, rather than image-editing programs such as Photoshop. They are 'objects', such as a line, and can be edited according to their characteristics (length, colour and so on) rather than pixel by pixel. With PhotoGraphics,



Some of the vector-tool options provided by PhotoGraphics.

Photoshop users gain vector-based line, pen, ellipse, rectangle, polygon and starburst tools with which to create shapes that can be edited, even after they have been rasterised. Also, PhotoGraphics lets the user place multiple text blocks on a path. Text-formatting options include baseline shift, kerning, tracking and leading, as well as character style sheets, super and subscript, all caps, small caps, full justification, and horizontal and vertical scaling.

PICA Software expected to be distributing PhotoGraphics for $295 RRP by the time you read this. The company can be reached on 03 9388 9588, fax 03 9388 9788 and <www.pica.com.au>.

—Steven Noble

NEWS BRIEF

Apple Computer has announced a new program aimed at attracting more students to develop for the Mac.

The Apple Developer Connection (ADC) Student Program provides tertiary students with Metrowerks CodeWarrior for Java (academic licence), Metrowerks CodeWarrior for Macintosh ('lite' version), Apple's free Macintosh Programmer's Workshop, ACI's 4th Dimension, Bare Bones Software's BBEdit, Bowers' AppMaker, MindVision's Installer VISE, REAL Software's REALbasic, Tenon's MachTen CodeBuilder, and the Tools Plus libraries and framework from Water's Edge Software. Information and third-party discounts are also available.

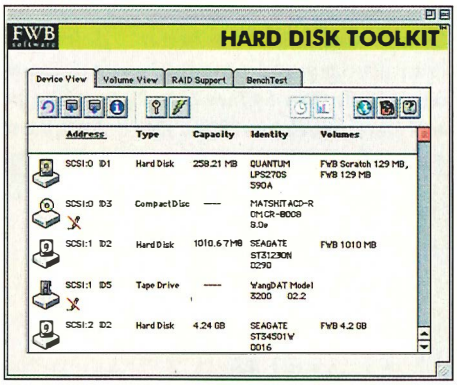
Membership is $US99 per year, and students can sign on at <developer.apple.com/programs/students.html>.

HARD DISK MANAGEMENT

FWB's Toolkit supports HFS+

FWB Software has released version 3.0 of its Hard Disk Toolkit. The upgrade adds support for some of the features previously only found in the company's RAID Toolkit, as well as for recent Apple technologies including Mac OS 8.5, HFS+, the iMac and the latest G3s. It also features a revised interface and enhanced IDE/ATA support.

Hard Disk Toolkit 3.0 supports RAID 0 and 1 and device spanning, according to the company. It ships on a new bootable CD-ROM, and can create optimised Photoshop scratch disks. The company said version 3.0's new user interface would let users jump from device view to volume view and between various functions with a single click.



Hard Disk Toolkit 3.0 includes RAID support and features a new user interface which FWB said would let users jump from device view to volume view with a single click.

Hard Disk Toolkit 3.0 requires a Mac with a 68030 or later processor running System 7.5.3 or later. It must have at least 5MB of free RAM, a hard disk, and a CD-ROM drive.

The $320 RRP product is distributed in Australia by Guardian Data (02 9417 6144, fax 02 9417 0297) and PICA Software (03 9388 9588, fax 03 9388 9788). This is the full retail version of Hard Disk Toolkit 3.0; the PE and OEM versions will not become available until mid-1999. Upgrades are $79.95.

—Steven Noble

(continued from page 14)

Mac OS X Server is what software engineers call a 'modern' operating system, meaning it delivers on all the buzz words for the new millennium: full pre-emptive multitasking (applications share the computer in the most effective way possible), protected memory (if one program crashes, the computer keeps running, along with all other programs) and advanced virtual memory (the computer decides what disk space it needs for VM, and uses it effectively).

Further, Mac OS X Server comes with a feature that catapults it into the brave new world of network computing—NetBoot. Once connected to a G3 running Mac OS X Server, no iMac or new G3 needs a copy of Mac OS on its own hard disk in order to boot up. Simply hold down the N key at first startup, and it will load its system software from a Mac OS disk image kept on the server. Then, type in a name and password to collect applications and files as well.

With NetBoot, the network administrator no longer has to update and repair multiple copies of Mac OS and each application in use, as there's only one copy of each, stored on the server and downloaded to each client when required. Also, users no longer have to sit at the same Mac every day, as their files and preferences—including those for Extensions Manager—are stored in their home directory under Mac OS X Server.

To demonstrate this feature, Jobs booted up 50 iMacs, each connected to the one G3 running Mac OS X Server. Within two and a half minutes, every iMac was playing one of three broadcast quality movie clips that were being streamed off the server. The first iMac kicked into action in just seconds.

Now on the net

All this hot Apple product news begs the question, where do I get it? One week after the expo, Apple Computer unveiled a new answer to that question: buy it online, at AppleStore Australia <www.apple.com.au/store>.

Throughout 1998, Apple in Australia has been implementing a system in which computers are assembled the moment they are ordered. This has reduced inventory, shortening upgrade cycles and freeing up resources.

January's announcement moves this system online, where computers will be sold in standard configurations and at RRP.

Later this year, AppleStore Australia will move to build-to-order, the system which already lets US customers configure their Macs (other than iMacs) exactly as they choose. BTO options that will become available for the new G3 in the US this March include Gigabit Ethernet, up to 100GB of storage across three hard disks, and a SCSI PCI card. Bowley said Apple had not yet determined when these BTO options would become available through AppleStore Australia.

AppleStore Australia: now online.

Developers to the rescue

What's the point in throwing a party if nobody comes? Fortunately for Apple, developers are now expecting Apple to remain profitable and to grow its business. In fact, Apple chief financial officer Fred Anderson reported the company's fifth consecutive quarter of profitability shortly after the expo (see 'News Brief', p15).

The result of this widespread confidence: 65 percent of the 400 exhibiting companies unveiled new products at the show, according to Macworld Expo director Rob Scheschare.

By far the hottest new product was Virtual Game Station, from Connectix, which enables G3-based Macs to run many PlayStation games.

While some PlayStation games would not run under VGS, the list of tested games that was posted to <www.virtualgamestation.com> included such favourites as Tekken, NBA Shootout 98 and Crash Bandicoot 3: Warped. At press time, Firmware, which distributes Connectix's other products in Australia, said it did not yet have an Australian price or shipping date for this product. The $US49 version released at the show works with the PlayStation titles sold in the US only.

The bottom line

Macworld Expo San Francisco 1999 was confirmation of Apple's recovery; SF2000 will demonstrate its strength.

Steven Noble attended Macworld Expo as a guest of Apple Computer Australia.

Around the traps / snippets from the Expo

- Apple released three new Apple Studio Displays: a relaunched version of its original 15.1-inch LCD monitor, now selling for $2395; the Studio Display 17, which has a viewable area of 16 inches diagonal and sells for $1100; and the $3300 Studio Display 21, which Apple said was the cheapest self-calibrating monitor of its size on the market.
- QuickTime 4 was a no-show. However, Sorensen did release version 2 of its video codec. Expect the latter to become part of the former when it is released via <www.apple.com/quicktime> in the near future.
- Adobe acquired GoLive, the maker of the high-end Mac-only web-authoring tool, CyberStudio. It will complement, not replace, PageMill.
- USB was the show hit, with dozen of new products released. Look out for the March 1999 issue of *Australian Macworld* for further details, including the local availability of the latest products for USB, FireWire and Mac OS X Server.

NEWS BRIEF

Quark has revised Immedia—the company's XTension for authoring multimedia via the page-layout program QuarkXPress—with its release of version 1.5.

The new version of Immedia lets the user specify thousands or millions of colours per project, along with opacity and drop shadows for many types of objects. Other new features increase the interactive potential of the software, by letting the user combine variables, functions and expressions that have been drawn from an enlarged set.

Immedia requires XPress, which is $2495 RRP. Immedia 1.5 was expected to become available in the second fortnight of January for $895 RRP. Australian distributor Elite Software can be reached on 02 9975 5855, fax 02 9975 5852 and <www.elitesoftware.com.au>.

The all new G3

Faster processors, cache and memory systems, built-in ATI RAGE 128 graphics accelerator to run 3-D graphics even faster than before. Up to 1Gb of RAM, up to 100GB of hard disk storage, 3 spare PCI slots and built-in 100Mbps Ethernet,USB and ultrafast FireWire.

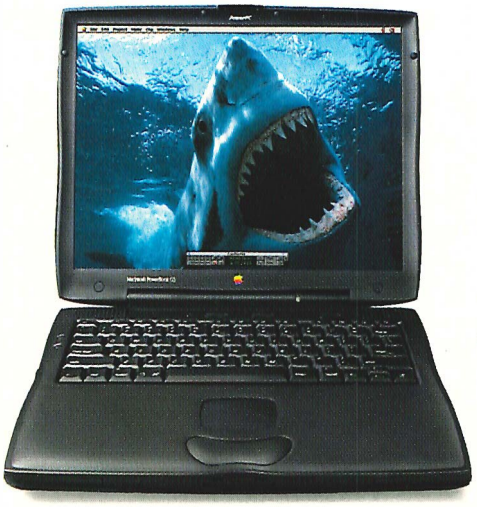
PowerMacintosh G3 300 64/6G/CD/521K cache ..... **$3495**($33/wk)
PowerMacintosh G3 350 64/6G/DVD/1Mb cache ..... **$4495**($43/wk)
PowerMacintosh G3 350 128/12G/CD/Zip/1Mb cache ..... **$5495**($50/wk)
PowerMacintosh G3 400 128/9G-U2/CD/1Mb cache ..... **$6695**($58/wk)
Memory for new G3 64Mb...**$320** 128Mb... **$595** 256Mb... **$Call**

Apple Studio Display 17
Innovative design, 16" viewable screen with Diamontron technology **$1100**
Apple Studio Display LCD
Innovative LCD design, 15.1" viewable screen, wall or desktop mounting **$2395**
Apple Studio Display 21 (with 4 **USB** ports)
Innovative new design, 19.8" viewable screen, Trinitron tube with ColourSync **$3295**

iMac in colour

The world's best-selling personal computer now comes in blueberry, strawberry, tangerine, grape and lime—and includes a 266MHz PowerPC G3 processor, 32MB SDRAM, 6GB hard drive, 24x CD drive, built-in 56K modem, 10/100Base-Tx Ethernet, two built-in 12Mbps Universal Serial Bus ports and more—plus Mac OS 8.5 and a ton of great software.

iMac 266 32/6G/CD/56k Modem/Ethernet ..... **$2545**($25/wk)
Memory for new iMac 32Mb...**$140** 64Mb...**$260** 128Mb... **$505**



G3 PowerBooks

Features the fastest performance ever in a notebook computer and incorporates performance-boosting backside level 2 cache and SDRAM and SGRAM for the fastest memory available. Supports two lithium-ion batteries for up to 7 hours of use and offers 3 configuration options for your needs and budget.

Advanced multimedia capabilities include a high-quality 14.1 inch diagonal display active-matrix (TFT) display and up to 4MB of video memory for 24 bit colour on an external monitor, provides resolution scaling and outstanding 2D/3D graphics acceleration through an integrated ATI RAGE LT PRO graphics controller

PowerBook G3 233 32/2G/CD/56k Modem 14.1" TFT ..... **$5495**($50/wk)
PowerBook G3 266 64/4G/CD/56k Modem 14.1" TFT ..... **$6595**($57/wk)
PowerBook G3 300 192/8G/CD/56k Modem 14.1" TFT ..... **$9995**($75/wk)

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Flexirent

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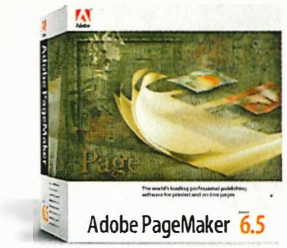
PowerSuite for Quark - QX Tools, QX Efects, Preflight Designer **$399**
Adobe Photoshop 5.0 ..... **$1295**
PowerSuite for Photoshop - Photo Tools, Intellihance & Portfolio **$399**
MetaCreations Painter 5 ..... **$599**
Macromedia Freehand 8.0 ..... **$759**
MetaCreations Bryce 3D **$409**
MetaCreations Poser 2.0 ..... **$299**
Ray Dream Studio 5.0 ..... **$569**
Adobe PageMill 3.0 ..... **$179**
MS Office 98 ..... **$835**
Adobe Internet Pack **$399**
•PageMill •ImageReady •ImageStyler & PhotoDeluxe



Half Price Limted Offer
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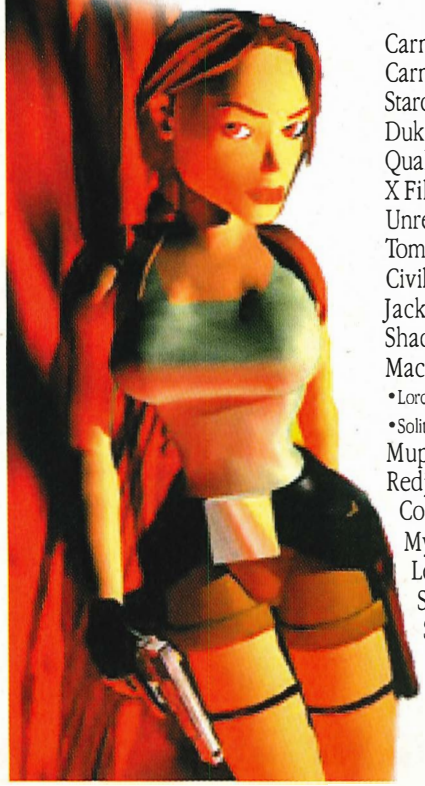

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QuickClicks

Discovery: Explore The World Of Oil And Gas

CD ENGAGES, IS SELECTIVELY INFORMING

Discovery: Explore The World Of Oil And Gas aims to lift the shroud of mystery from an industry whose products (from motor fuels to plastics) dominate our daily lives, but by its nature remains remote from users.

Designed primarily for use in high schools, this oil industry-funded CD-ROM tries to seduce its adolescent target audience by adopting a sci-fi game interface that resembles the control console of an alien spaceship. A confusing set of navigation tools ultimately (and perhaps inadvertently) makes exploring for 'hot spots' on Discovery very much like exploring for oil itself—a lengthy, high-risk occupation that requires more than a bit of luck and plenty of patience.

And like oil exploration, once you get the hang of it, Discovery can be a very enriching experience too. The Discovery CD-ROM takes full advantage of its interactive multimedia format to convey an extraordinary amount of information about the Australian petroleum industry and oil in general. It combines the harsh sounds of drill rigs and oil refineries with QuickTime movies and virtual-reality tours of these facilities; it uses animated graphics to demonstrate operations such as seismic surveys, and the formation and location of Australia's oil reserves. Information displayed on pop-up megaliths is accompanied by photos, movies and explanatory graphics. A switch into data mode allows the user to search for 23 data packs that can be downloaded from the CD-ROM and read later in PDF format. These contain detailed information about many scientific, technical and socio-economic aspects of the industry that can be used as the basis for class projects. A detailed set of teacher notes sets out suggested activities and projects that can be pursued by students individually or in group or class settings.

Being essentially an industry public-relations tool, Discovery doesn't have much to say about the environmental havoc wreaked by oil around the globe. Or anything about the power politics, skulduggery, or exploitation of developing countries and indigenous peoples that have characterised the industry's development over the past century. You'll need a good book like Anthony Sampson's *The Seven Sisters* for that.

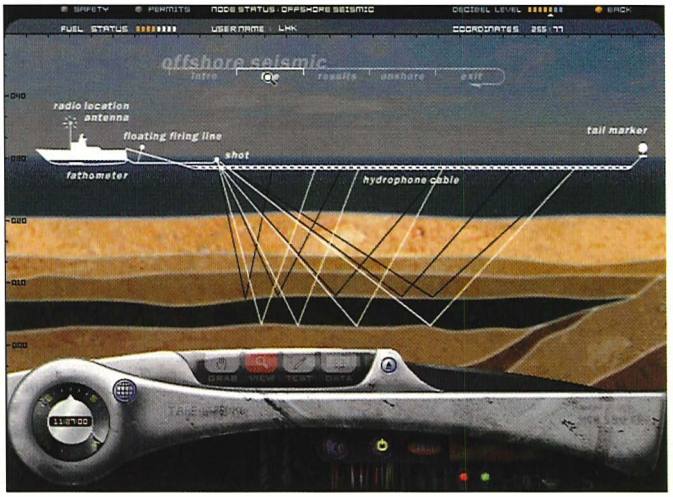
Those limitations aside, Discovery offers a rewarding tour of a huge and vital industry that generally manages to keep out of the public eye.

Type:	Education
Rating:	3½
RRP:	$65
Distributor:	Institute of Petroleum
Telephone:	03 9614 1466
Facsimile:	03 9614 1416
Reviewer:	Larry Kornhauser

RATING KEY

Outstanding	5
Very Good	4
Good	3
Flawed	2
Unacceptable	1
Dangerous	bomb

Short and sharp, QuickClicks are brief reviews of the latest products, evaluated by experienced users. Detailed product reviews are on page 61.



Search for black gold in Discovery: Explore The World Of Oil And Gas.

Sky Island Mysteries

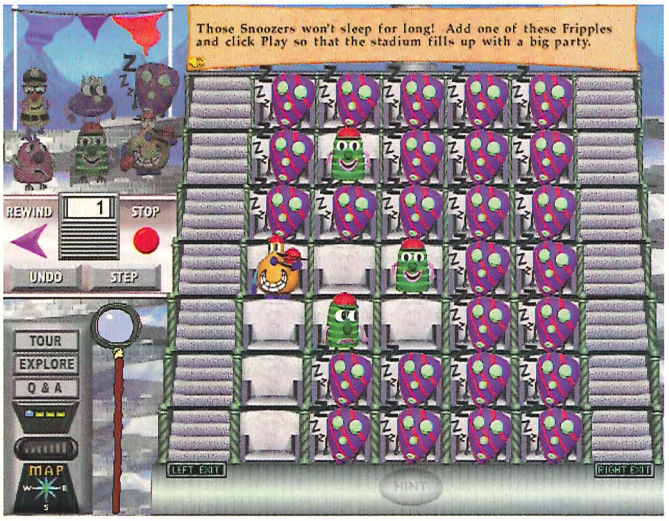
PROBLEM SOLVING IN THE NAME OF FUN

The tricksters have taken over and are wrecking the fun of the fair. Everyone enjoys a festival, even crazy creatures from islands in the sky. So it's understandable that they'd be very annoyed if someone, or something, was spoiling their fun.

The Thinkin' Things series were top programs a few years ago; this is the start of a new series that manages to combine lots of puzzles to get kids aged eight to 11 thinking hard. The previous Thinkin' Things programs only had one shortcoming: their puzzles, though fabulous, didn't pull together into a common goal. This new title doesn't suffer from this flaw. Its puzzles are challenging and have a purpose: to find those tricksters.

Searching for the tricksters isn't easy as there are over 3000 suspects. Luckily there are plenty of clues. On Rebus Island we put together sentences using pictures and letters to build riddles and silly sentences. The picture of an eye plus the letter *m* gives us *I'm*, as we puzzle over what the mayonnaise said to the refrigerator ("close the door, I'm dressing!"). There are spelling lists to use and hints if it gets a bit tough.

Then it's off to the air show where we build a flight log to get those planes in the air without any disasters. My favourite location is Stadium Island where we place spectators in exactly the right spot. If we put a Foody Fripple next to a Spotty Fripple they might not be too happy, and those stripped Fripples can't wait to do a flip—but only if they are in the right company. There is variety here but we could do with one more location and one more puzzle. So we beat the challenge, earn the clues and finally trap the Trickster. The kids think they are playing but they are problem solving and even learning about sounds, it's a great way to stretch the mind.



Seat the spectators correctly to get the Fripples flipping in Thinkin' Things Sky Island Mysteries.

Type:	Education
Rating:	
RRP:	$69.95
Distributor:	Dataflow
Telephone:	02 9417 9700
Facsimile:	02 9417 9797
Reviewer:	Anne Glover

Fisher-Price Pet Shop

VIRTUAL PETS ARE INDESTRUCTIBLE

Here is the easiest way to fill your home with pets, without any of the mess. If the kids want a puppy, you can give them one, and throw in a rabbit, a couple of hamsters and a bunch of kittens too.

In the Fisher-Price Pet Shop they can indulge their love of animals by taking charge of the entire operation. They can even be the pet vet or run the grooming salon if they wish.

First we select our pets for the shop. A dog, say: will we go for the cockerspaniel or the poodle? Either way, this new dog will need a bath and it has to be fed—running a pet shop isn't all fun and games you know.

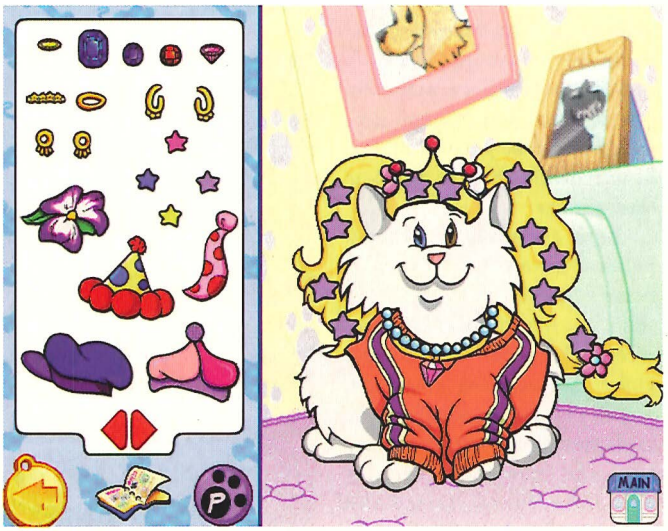
Once we dry the puppy with the blow drier, we colour its hair, add pretty bows and ribbons, and even dress it in clothes, without our pet squirming once. These pets will endure all the crazy clothes and the attention that some kids love to impose on them.

If the kids get sick of dressing the dog, they can move onto designing a new home for the fish. They can select an underwater fantasy land and add their own selection of cute props. Once the tank is ready they can order some new fish.

There's no scooping the dead ones out of the tank or rushing to the shop to find an identical guppy before the kids wake up. The kids might not be able to cuddle these pets, but they sure are cute. Best of all, they are indestructible.

This program could be used to show children a few of the responsibilities of caring for their pets.

However, being a pet owner is much easier on the computer—there are no chores and no penalty for getting bored with the same pet. In fact, they can select a new pet every time they visit. After all, they're the owners of the pet shop.



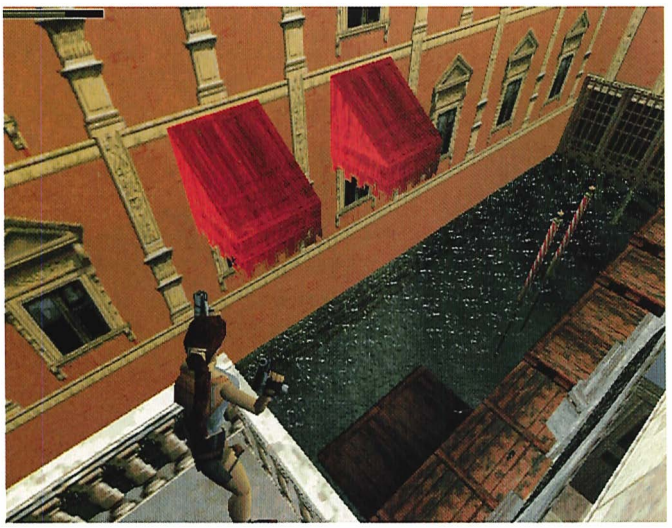
Kids can dress and groom their pets all day, without any protests, in Fisher-Price Pet Shop.

Type:	Early Childhood
Rating:	1/2
RRP:	$49.95
Distributor:	Dataflow
Telephone:	02 9417 9700
Facsimile:	02 9417 9797
Reviewer:	Anne Glover

Tomb Raider 2

LARA CROFT LEADS YOU FROM TIBET TO VENICE

Lara Croft. Very few people can claim a following as large as she. Even fewer imaginary characters can stake that claim. And at the risk of being called blatantly sexist, very few people—real or imaginary—have a body as good as she does. Lara is the heroine in Westlake Interactive's latest port to the Macintosh, Tomb Raider 2. The game was an instant hit on the PC, with numerous people following Lara on her adventures from Tibet to Venice. Basically, it's a highly interactive shooter, but it diverges from the genre in a number of ways.



Tomb Raider 2 is a third-person shooter. That is, you see Lara Croft, in addition to seeing what she sees.

First, Tomb Raider is in the third person. This means that Lara can be seen the whole time, adding a new depth of perspective to the experience, in—ahem—more ways than one, if you take my meaning.

Second, the game is not so concerned with guns and ammo. You begin with two pistols that have unlimited ammunition, and the character has some degree of 'auto-aim', but Tomb Raider is more concerned with making you interact with your environment. Jump off ledges, move big hunks of stone that block the path, run away from boulders—it's reminiscent of *Indiana Jones*. You could call it a 3D version of Prince of Persia.

Tomb Raider is a breath of fresh air. It defies the trends of its genre, encouraging you to think, not just shoot. And although controlling Lara takes a bit of getting used to—especially the jumping and catching onto ledges—the game is totally addictive, once you get the hang of it.

Tomb Raider requires a PowerPC processor clocked at no less than 80MHz with at least 16MB of RAM. A 3D graphics card, such as an ATI Rage Pro, or preferably a Voodoo or Voodoo 2 card, is highly recommended.

Type:	Game
Rating:	
RRP:	$89.95
Distributor:	Try and Byte
Telephone:	02 9906 5227
Facsimile:	02 9906 5605
Reviewer:	James Allworth

Lode Runner 2

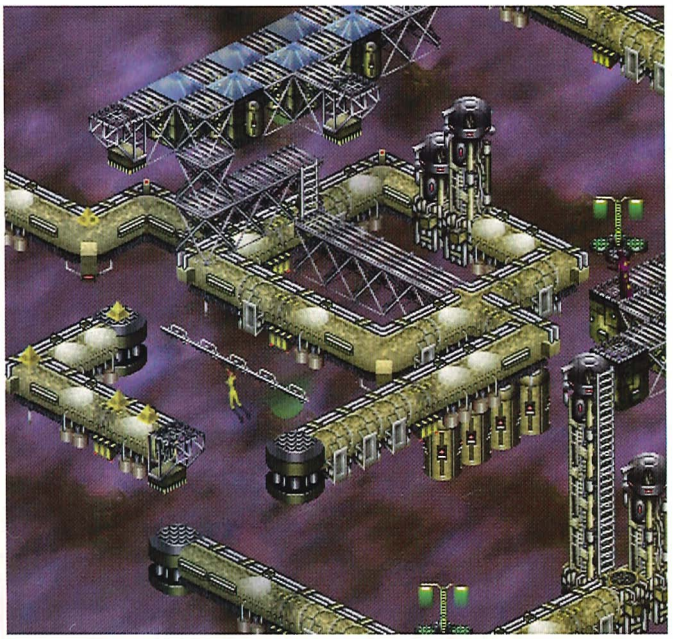
PLATFORM LEGEND GETS THIRD DIMENSION

Lode Runner, a famed pioneer of the platform genre from the early 80s, has, many years on, spawned a sequel. Lode Runner 2 follows a similar idea to its aged parent—run your little character around, pick up bits of metal and avoid Mad Monks—but adds a whole lot more. Most obviously, a third dimension.

The original Lode Runner was a pretty straight-up flat platform game. Your little man climbed ladders, shimmied across ropes, collected his metal and escaped, all in glorious 2D.

In many ways, this new version is the same, but in some ways it is very different.

This game has five environments, and they're often quite beautiful (if rather surreal). Most have more than a faint hint of Escher about them. The designers have really used the new third dimension to create very singular (and often very hard) levels. However, the good news is that, if stuck, you can skip levels. You can also design your own with the included level editor. Expect a lot of damn hard home-designed games to be hanging around the net by now.



Lode Runner has been completely redesigned in 3D with this new version.

So, any quibbles? The 'you can only jump off corner blocks' rule is annoying at first, but you soon get used to it. I'd argue that the game perhaps gets a little too hard a little too quick, but platform heads will have a fine time.

It's the looks that seduce with this one—and the well-worked out, occasionally fiendish, puzzle-based gameplay.

A perfect game to sit on your hard disk (it's a 44MB full install), ready to be taken out for a quick bit of puzzling every now and then. Dig it?

Type:	Game
Rating:	
RRP:	$79.95
Distributor:	GT Interactive
Telephone:	02 9902 3000
Facsimile:	02 9902 3030
Reviewer:	Stephen Dunne

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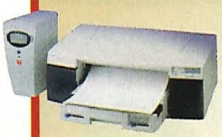

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Mac OS 8.5: beyond the basics

You've upgraded—now make it pay off. By Joseph Schorr

Upgrading your system software to Mac OS 8.5 doesn't cost a lot—$165—but it can be a big investment in terms of time and effort. If you've taken the plunge and upgraded, you want to get the most out of your investment—and that means retraining yourself to take advantage of the new tools, shortcuts, keystrokes and menu commands that are suddenly at your beck and call. Assuming that you've already mastered the basics of Mac OS 8.5, such as tweaking its look-and-feel with the Appearance control panel, it's time to move on to some techniques and shortcuts that take you deep into the heart and soul of Mac OS 8.5.

Playing favourites

The new Favorites command offers an easy way to access the files, folders, disks and servers you use most—you can reach it from the Apple Menu or from a pop-up menu in the revised Open and Save dialogue boxes. The Finder's File menu now sports an Add to Favorites command, but don't overlook the easiest way to turn any item into a favourite: just control-click on it to bring up a contextual pop-up menu that contains the same command. This trick also works if you control-click on the tiny folder and disk icons that now appear in the title bars of open windows.

Universal folder expanding

Mac users have complained for years about the Open and Save dialogue boxes' shortage of navigation shortcuts. In Mac OS 8.5, improved Open and Save dialogue boxes let you view files in sortable lists containing nested folders, similar to standard Finder list views. (You'll find these revamped dialogue boxes only in programs that have been updated to support them.)

Not surprisingly, many of the folder-manipulating tricks that work in Finder windows also work in these dialogue boxes. For example, you can select a folder in an Open dialogue box and press command–right arrow to display the contents of the folder hierarchically within the dialogue box; pressing command–left arrow collapses nested folders in the dialogue box. These shortcuts let you navigate to a deeply buried file without drilling down through layers of folders.

The same folder-expanding tricks work in the Network Browser, a new interface that provides easier access to file servers. From the Apple Menu, open the Network Browser to reveal a list of available AppleTalk zones, select a zone, and press command–right arrow; the view expands to show all the servers in that zone. Press command–left arrow to collapse the view.

Drag-and-serve networking

The Network Browser is less hassle to use than the old Chooser, but network access is even easier if you take a shortcut: drag the icons of the servers you use most from the Network Browser window onto the desktop to create instant aliases. You can then log on to those servers by simply double-clicking on the icons; there's no need to open the Network Browser or the Chooser. The same trick works with the AppleTalk-zone icons that appear in the Network Browser window: drag a zone icon to the desktop and click on it to simultaneously open a Network Browser window and display the list of available file servers in the zone.

Put Sherlock on a schedule

Easily one of the coolest features in Mac OS 8.5 is Sherlock. This slick, high-speed search engine sifts through your local files or the internet, looking for information at lightning speed. Sherlock can even search the content of the files on your hard disk for a specific word or phrase. For this feature to work, Sherlock first has to index your hard disk—a process that can take hours. Apple suggests that you initially have the Find application index your disks when you're not using your computer.

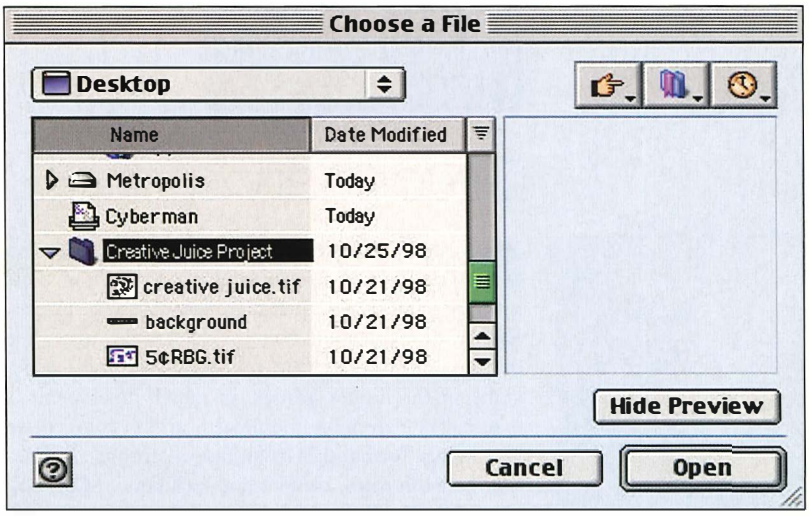
But as Sherlock's index of your hard disk falls out of date, so do the results of your content searches; you have to index your hard disk regularly to keep Sherlock's internal database current. The good news is that you can schedule this to happen automatically. In the Find by Content window, click on the Index Volumes button, then click on the Schedule button and pick the days and times when you want Sherlock to rescan your disks. Back in the Index Volumes window, activate the check box next to each of the disks you want indexed. For example, you can schedule your Mac to turn itself on every day at 3am via the Energy Saver control panel and have Sherlock index your drives at 3.05am. This way, your Mac will always be up to date.

Find refined

Perhaps even more significant than the Find by Content feature is the fact that the new Find command lets you save the criteria of a particular search. You just press command-S to save a search, or choose Save Search Criteria from the File menu after setting up your search criteria in the Find File window. This action saves the search criteria in a file that you can place anywhere on your hard disk; the next time you want to access the files that the search identified, just double-click on the saved-criteria file to launch the Find application, run the search, and display the results in the Items Found window.

You can also use this technique to rig up a daily backup system. Set up a search that looks for all the documents on your hard disk that were modified today, then save the search criteria. At the end of each day, you can double-click on the search file to get a window displaying all the files on your Mac that need to be backed up. Drag them from the Items Found window to a backup disk, and you're done.

Joseph Schorr is the coauthor of Macworld Mac Secrets, *fifth edition (IDG Books Worldwide, 1998).*



You can expand and collapse hierarchical folders in Mac OS 8.5's new Save and Open dialogue boxes from the keyboard, just as you can with standard list views in the Finder.

The sound of menus / inside the Appearance control panel

Apple has rolled dozens of subtle changes into the design of the new Mac OS, but at least one new feature is anything but subtle: Mac OS 8.5 makes noise.

Turn on Platinum Sounds in the Appearance control panel, and suddenly your Mac is snapping and ticking its way through every drag of an icon or selection of a menu command. The only disappointment is that you just get one set of sounds, but with a little help from ResEdit, which is freeware from <developer.apple.com/macos/tools.html>, you can create a new soundtrack with your own custom sounds.

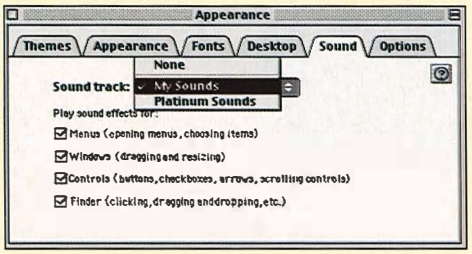
1. Make a copy of the Platinum Sounds file (in the Sound Sets folder, inside the System Folder's Appearance folder), and open the copy with ResEdit.

2. Open the Snd Resource icon to reveal the 67 sounds that make up the Platinum soundtrack. To hear a sound, select it and choose Try Sound from the Snd menu.

3. To replace one of these sounds with your own, first record your sound from any audio source, such as a CD, using the Record New Sound command in the Snd menu; it will appear as a new sound resource at the top of the Snd list.

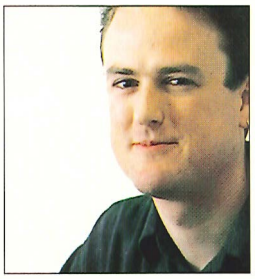
4. Suppose you want to use this sound to replace the one that plays when you're dragging items across the desktop. Make a note of its ID number and name, then delete the old resource by selecting it and choosing Cut or Clear from the Edit menu.

5. Select your new sound and press command-I to see the Info window for the resource. Type in the ID number and the name of the resource you want to replace, then close the window. Save your changes in ResEdit, close the file, and install it in the Sound Sets folder. Now you'll be able to choose your edited sound set from the Sound Track pop-up menu in the Appearance control panel.



Replacing a whole sound set takes diligence—some of the sounds that accompany system actions are actually made up of several different sounds played in rapid succession—but with some effort you can give your Mac a voice that's uniquely its own.

Secondary schools, primary techniques



Steven Noble writes about Apple and education in Australia.

High schools are testing alternatives to keeping computers in labs

In Australia today there is a fundamental distinction between primary and secondary education. Few primary schools keep their computers together in labs. Rather, they distribute them in clusters through some or most classrooms. But secondary schools—especially in the higher grades, in which assessment is external or externally monitored, and is competitive and highly formalised—maintain a stronger distinction between tools, content and technique. Many still keep most or all the school-owned student computers in labs, rather than distributing them through most classrooms.

Chris Blundell—the coordinator of information technology (curriculum) at Redlands College, an independent high school in Wellington Point, Queensland—has spent the last 18 months assessing the possibilities and pitfalls involved in moving computers from the lab to the classroom.

In his interim findings, Blundell argued that computers in high schools should be divided between four potential uses.

First, some computers should still be in labs, with careful planning to minimise the drawbacks of this approach. For example, workbooks could set out the learning tasks required of students, who in turn could enter into usage contracts.

Second, most computers should be distributed through what he termed 'accessing classrooms', with seven to 10 in each. A data project and/or printer could also be included.

Third, some computers should be allocated to a library learning centre, where students could use them independently.

Three of the Power Macs in an accessing classroom at Redlands College, Wellington Point, Queensland.

Fourth, those classrooms that were not designated 'accessing classrooms' should still have one or two computers each.

He said one indicator of the success of the project was Redlands' own technology-investment plans. On top of its existing infrastructure, consisting of three computing labs (30 Macs and 60 PCs), library computers, and the current accessing classrooms, the school would acquire the following this year: another accessing classroom of 10 iMacs (each with Virtual PC); the same for a library learning centre; and computers in the specialist media studios. All would be networked via a switched fibre-optic backbone.

Blundell expressed optimism about the accessing classrooms in particular. They created opportunities for teachers who were willing to embrace a wider range of teaching strategies, becoming more 'guide at the side' than 'sage on the stage'. However, he said the success of these classrooms was largely dependent on the actual teaching and learning strategies employed within. He said some students and teachers have difficulty moving to an approach that required active student participation. The solution is for teachers to find satisfaction in more variable forms of student interaction, and to motivate students that lag behind.

Blundell said conversations and a posting to the <oz-teacher> mailing list had created much curiosity about his approach, but little criticism. However, one teacher said locking computers together in a lab was the most effective way of preventing their theft. Also, a network administrator said that few teachers at his school would have the expertise to use computers in their classrooms, so it was best to locate computers and technical support staff together in the one convenient location. Blundell's response: find new and effective ways to educate teachers in the use of technology, and get the technical staff moving from class to class as necessary.

The Apple Learning Interchange, one of Apple's international but US-centric education web sites, has bought into this debate. An anonymous article entitled *Computer Labs: Issues, Problems, and Approaches* (under the 'Adaptive School Technologies' section) cited many problems with the lab approach, and it noted that some schools are distributing computers in smaller clusters instead. However, this article suggested a range of solutions that kept Macs in labs.

For the middle grades, the article suggested letting some classes make intensive use of the lab for part of the school year (a few weeks or a term), and then making way for other classes that will do the same. Also, individual students or small learning groups could make quiet use of spare computers when a class does not fill a lab. Further, the teacher could work with the lab supervisor to break down the distinction between lab and classroom activities.

The computer lab will not die overnight, as typing instruction alone requires a one-to-one computer-to-child ratio, which most schools can support in a handful of labs. However, the accessing classrooms approach is an intriguing alternative way to use some of a high school's computers, and it could involve students more deeply in technology-assisted learning.

Further information on Redlands College's Accessing Classrooms project can be found at <www.uq.net.au/~zzredcol/accessing/>. To subscribe to the <oz-teachers> mailing list, send the no-subject one-line message 'subscribe oz-teachers' to <majordomo@owl.qut.edu.au>. The Apple Learning Interchange is at <ali.apple.com>.

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twoofakind

With Mac OS 8.5, AppleScript has finally learnt how to drive ColorSync. The result—your Mac can handle your colour operations automatically, while you take a well-earned break. By Michael Priest

AppleScript is Apple's tool for helping users partially automate their Macs. While its most obvious use is moving files around in the Finder, AppleScript can control any application that has been made scriptable by its authors, and can trigger any feature within that application that has been made available as an AppleScript command. For example, both FileMaker Pro (a database program) and QuarkXPress (a page-layout program) are scriptable, to the point where AppleScript scripts can automatically construct, format and print entire XPress documents using information kept in FileMaker databases.

AppleScript has a format and syntax similar to English, making it a relatively easy scripting language to learn (see 'Stick to the script', *Australian Macworld*, January 1998). Many simple tasks can be automated with only a few lines of script. Scriptable applications can come with embedded AppleScript commands that handle complex tasks, so the scripts you write yourself might need only point to them with a word or two.

AppleScript has been included free on Mac OS installer disks since System 7 Pro. The latest Mac OS 8.5 ships with AppleScript 1.3, which contains a number of enhancements over the previous version 1.1.2 that shipped with Mac OS 8. These include its ability to add scripts to folders, so when a folder changes, the script is triggered. For example, a user might script a Eudora folder to automatically add all new mail from a mailing list to a searchable database. Or, a script could set up an archive folder that, after a given period, archives files using Aladdin StuffIt Deluxe.

The ColorSync connection

Also in Mac OS 8.5 is the ability to automate the latest version of ColorSync, 2.5.1, with AppleScript.

ColorSync is the Mac OS system extension that ensures that imaging devices—scanners, monitors, printers, printing presses and digital cameras—display or capture colour in a consistent manner, despite their use of quite different technologies. ColorSync 2.5.1 requires Mac OS 8.1 or later and is a free download from <www.apple.com/colorsync>.

Most such peripherals now come with device profiles on their installer CD-ROMs. Their manufacturers created the profiles with a colour spectrophotometer, which is a device that feeds a known set of colour values into a device, then examines the output (the scan from a scanner, say, or the image projected by a monitor). The profile describes the relationship between the colour that was supplied and what came back.

If an image captured with, say, and Agfa Arcus scanner, is to be printed on an Apple Color StyleWriter, ColorSync consults each device's profile then uses a colour-transform engine to ensure the StyleWriter, as well as it can, prints the colours that were originally scanned by the Arcus. On the way through, ColorSync will also correct the image as it appears on the user's monitor.

ColorSync profiles can also be embedded in images that are intended for display online. Internet publishers cannot control how their images will be reproduced—that's entirely up to the viewers' own monitors. But if the images contain profiles of the devices on which they were made, anyone using a ColorSync-aware web browser should see them in a form that is adjusted according to their monitor's profile.

To choose a profile for your monitor, or to create a new one—a process called calibration—use the Monitors & Sounds control panel and Mac OS 8.5's Calibration Assistant, as shown in figure one.

Currently, Internet Explorer 4.1 and 4.5 are ColorSync-aware. In the future, Netscape Communicator may also support ColorSync. Further, Apple has said it would release a version of ColorSync for Windows, which would encourage more internet publishers to embed profiles in their online images.

ColorSync 2.5.1 and AppleScript 1.3 are astonishingly useful tools, but why put them together? The answer: you can use AppleScript, Folder Actions and the scriptable ColorSync extension to automatically and transparently improve how images display or

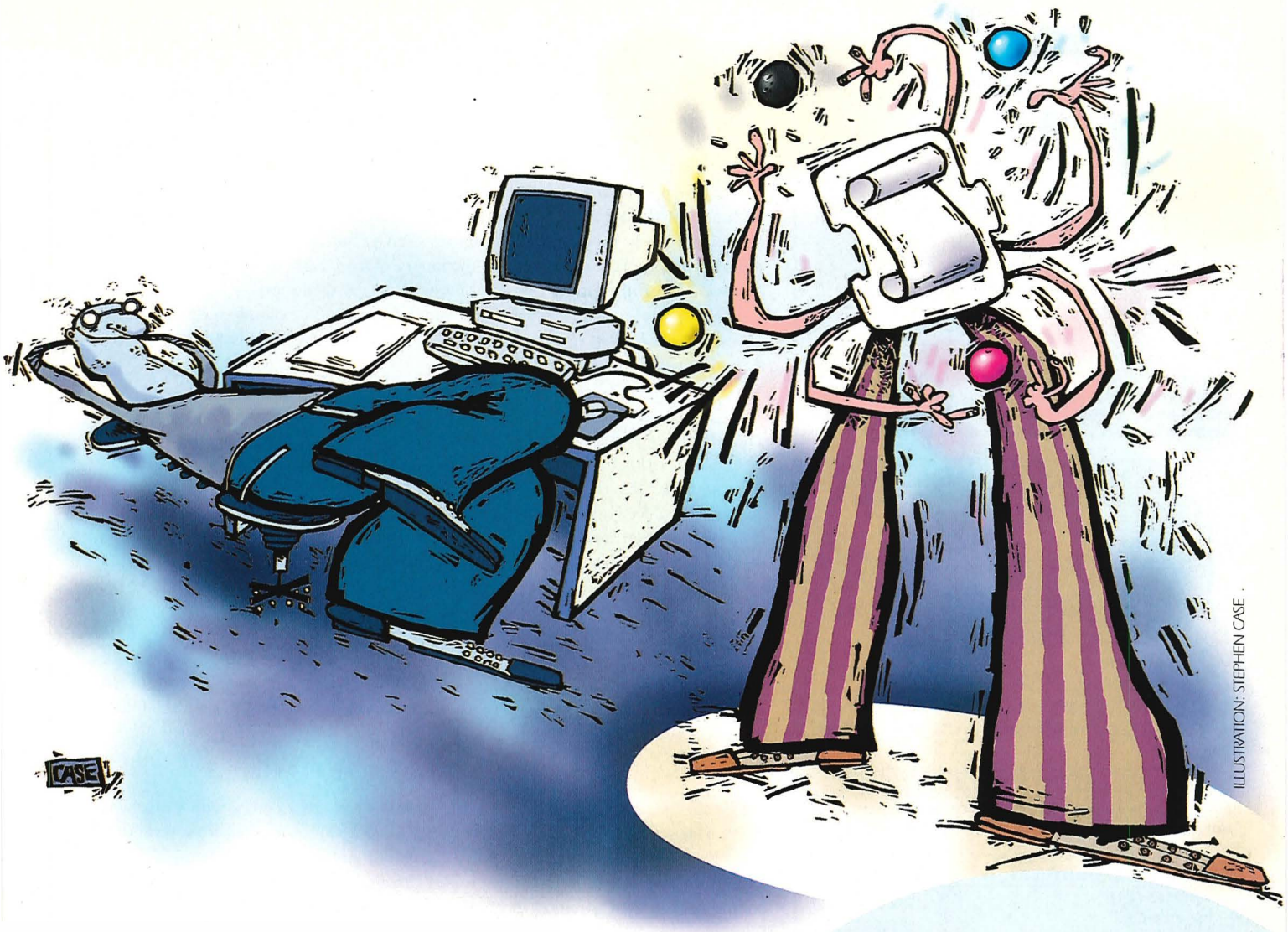


ILLUSTRATION: STEPHEN CASE

print. It's fast, it's effective, and it's free. And, if you're a regular user of Photoshop, you might be surprised to learn that AppleScript scripts can perform more accurate, reproducible RGB-to-CMYK conversions than Photoshop's own Mode command.

Writing AppleScripts

Most people never use AppleScript, perhaps because they believe it is too hard. It's an unjustified attitude, as Apple has tried hard to make AppleScript approachable and easy to use.

In fact, some applications can be scripted by simply 'recording' a series of actions using a free application called Script Editor, installed by default with Mac OS 8.5. Just click Script Editor's Record button, make your moves, and then return to the Script Editor and hit Stop (see figure two). Script Editor will then have recorded a script which you can edit, save, and run at any time by double-clicking its icon (see figure three).

Unfortunately, applications that can be recorded in this way are thin on the ground. Many more applications are scriptable, even though they're not recordable. That is, some of their features can be automated via AppleScript, but you'll have to manually write the script yourself.

Your first port-of-call with one of these applications should be the Open Dictionary command, which is under Script Editor's File menu. Open your desired application in this dialogue box, and you'll find a

Further resources / AppleScript stuff on the net

AppleScript's OSAX contain a wide syntax as is, but there are many functions you might want to add that simply aren't possible using them alone, such as exotic list functions or more advanced dialogue controls. You aren't the first to bump into these limitations, and AppleScript was designed to be easily extended by putting third-party OSAX in the Scripting Additions folder. The best place to find non-Apple OSAX is The AppleScript SourceBook site <oasis.bellevue.k12.wa.us/cheeseb/index.html>. Three well-respected freeware OSAX are Jon's Commands <www.seanet.com/~jonpugh/>, Tanaka's OSAX <mtlab.ecn.fpu.ac.jp> and Dialog Director <www.hylight.demon.co.uk>. The addition of these three alone make almost any task possible.

In addition to Apple's own AppleScript site <www.apple.com/applescript>, and the aforementioned AppleScript SourceBook, there are at least two excellent searchable mailing lists online at <lists.apple.com>. The AppleScript users list deals exclusively with AppleScript. The Mac Scripting list covers any scripting language for the Mac, but most discussion is about AppleScript. Both have searchable archives going back years. They are extremely active, and are regularly visited by Apple engineers, AppleScript developers (including some of the original authors of AppleScript itself) and very well-informed scripters from around the world. If you can't find answers to your questions in the archives, ask the lists—you will get a reply. Members will happily tackle the hardest question or the most basic.

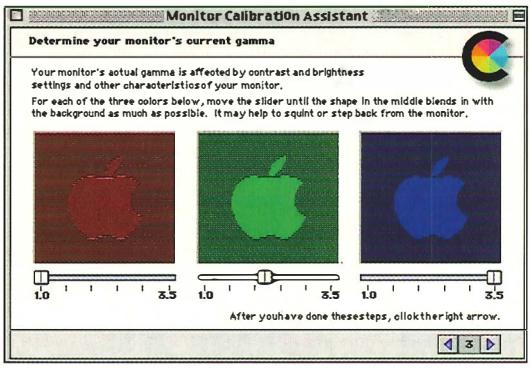


Figure one: Select a monitor profile in the Monitors & Sound control panel, or hit its Calibrate button so the Calibration Assistant can help you create a profile of your own.

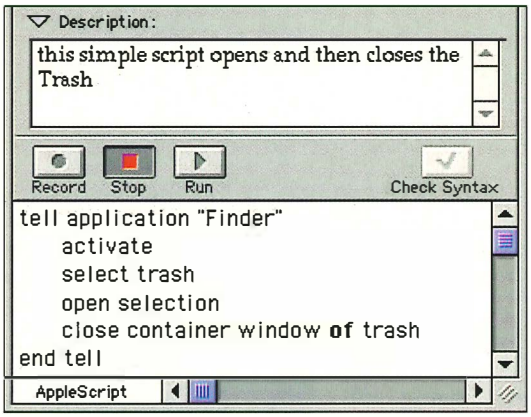


Figure two: A simple script created by opening and then closing the Trash while Script Editor was set to record.

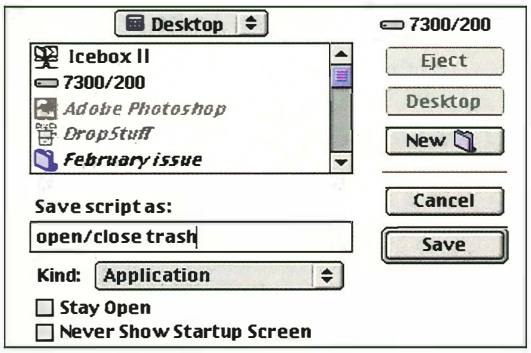


Figure three: By choosing Save As under the file menu and the Application in the Kind pop-up menu, you create a new double-clickable application. This app would open then close the Trash when double-clicked.

dictionary that lists the features of that program which are scriptable, and the syntax you'll need to use. If you can't find the application you're interested in when you're fossicking through its folder with the Open Dictionary dialogue box, then you're out of luck—the application isn't scriptable.

All of AppleScript's own commands are stored in files called OSAX. These can be found in the Scripting Additions folder in your System Folder. The standard commands are in the Standard Additions OSAX, but there are many others there too. As with applications, open the dictionary of an OSAX to find out what it can do. Don't forget the Finder also contains an extensive dictionary.

If an application is scriptable there are almost always example scripts included on its install CD. Rip them apart and stick them back together as you need, or to learn more about how they work.

Folder Actions

The Mac OS 8.5 innovation of relevance to us is Folder Actions. It is now possible to attach a script to a folder, via a contextual menu (control-click on the folder, then wait for the menu to appear). Five handlers are called when a script is attached—Folder Open, Folder Close, Add Item, Remove Item and Move Folder. A script can contain instructions for any and each of these actions—in other words, different actions can be performed depending on whether the folder has been opened, closed, added to or so forth. Sample folder scripts are included on the Mac OS 8.5 installer CD-ROM, in the CD Extras folder.

Warning: Folder Actions calling the Add item or Remove Item handlers only work on folders that are open—they won't work if the scripted folder is closed. However, the system regards a folder as open if it's tabbed along the bottom of the screen, and you'll likely find that this is the most convenient way to keep the folder script 'active' constantly.

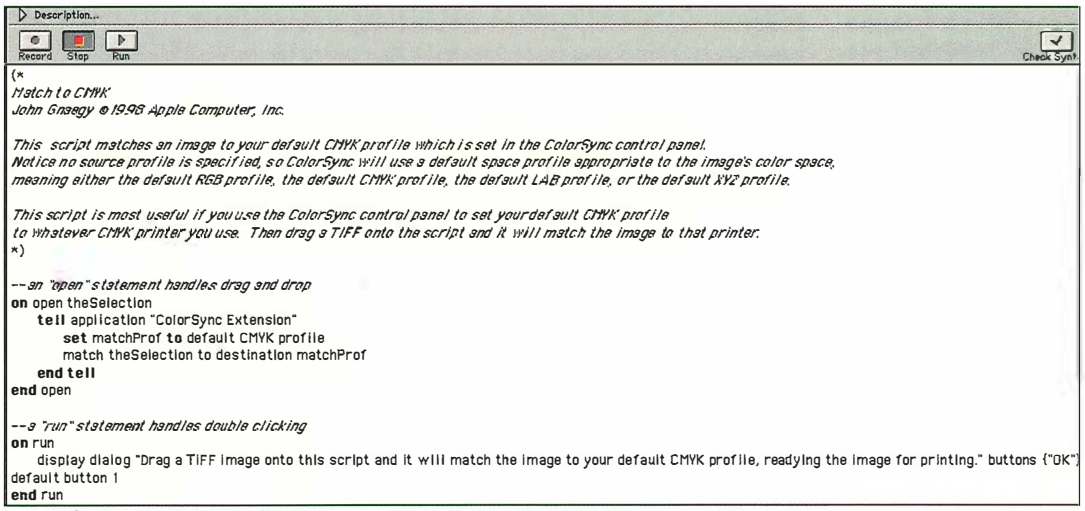
Scripting ColorSync

We'll take as a starting point one of the sample scripts that comes with ColorSync 2.5.1. This script, Match to CMYK (see figure four), can be found with several others in the ColorSync Extras folder after installation of ColorSync 2.5.1.

Match to CMYK script takes a TIFF image and converts it to CMYK (the colour system used for most professional full-colour printing) according to your selected default CMYK profile defined in the ColorSync control panel. Lines in italic are comments by the script's author, John Gnaegy of Apple Computer—they don't do anything when the script runs. The script consists of two subroutines: the first opens with an 'open' statement, and the second with a 'run' statement.

The open statement ensures that when a file is dropped on the icon of this AppleScript script, its name is saved into the variable 'theSelection'. The next two lines tell the ColorSync extension to set a variable called 'MatchProf' to the current setting of the default CMYK profile. The subsequent line tells ColorSync to match theSelection to the profile it found and saved as MatchProf.

Since the script needs the user to drop a file on it to run, the next subroutine—which begins with a run statement—throws up a dialogue box that says "Drag a TIFF image onto this script..." whenever a user tries to simply double-click the Match to CMYK icon. It's the open handler that does the actual work.



This script requires a user to manually drag-and-drop an image onto the icon of the script for it to work. It also modifies the original file, which may not always be desirable.

Figure five shows my slightly stronger script that, when attached to a folder kept as a pop-up on your desktop, preserves the original RGB files saved or copied into

it, makes a fresh CMYK version of the image in a separate folder, opens the CMYK folder, and—when it's done—displays a dialogue box telling you how many files have just been converted, and whether there were problems.

This script is still quite simple. To expand it further you might choose to write the results to a log rather than throw up a dialogue box, or make multiple copies of a file for different devices, or insert a dialogue box that lets users choose individual profiles for themselves. You might even choose to script the whole scanning process—the sky's the limit.

Where to find other device profiles

The crux of this whole process is the ICC profiles that ColorSync uses. A number are installed automatically with ColorSync and Mac OS 8.5. Profiles are also installed by other applications such as Photoshop, Illustrator and XPress. Apple maintains a selection of downloadable profiles at the ColorSync site listed above.

Hardware manufacturers generally include profiles of their scanners, monitors or printers on their software disks and web sites too. As profiles are simply text files, they can be freely swapped between PC and Mac, and you might find them on PC software disks.

Profiles supplied by manufacturers are 'factory settings'. They are sufficient for most purposes, but for the best results you should create your own. Custom-made profiles will match your equipment and environment exactly, and you can update and add to them—to accommodate new papers and inks, for example. The downside? Professional calibration usually requires a relatively expensive colour spectrophotometer.

The bottom line

Do yourself a favour and check out these amazing tools Apple has provided—you won't be disappointed.

Michael Priest is currently writing the Great Australian Novel—as an interactive AppleScript application. He can be praised or pilloried at <michael@priest.com>.

Lonely Planet / one user's experience

Lonely Planet, the publisher of the *Lonely Planet* travel guides, is one user of ColorSync in daily production. "Our system is intended to allow us to share our pictures between the four Lonely Planet sites in London, Paris, Oakland and Melbourne," said Richard l'Anson, of the Lonely Planet image library. "Naturally we want to make sure that each designer sees the images in the same way, and doesn't feel the need to make changes to brightness or colour because of what they see on their monitors".

A Linotype-Hell Topaz robotic scanner takes care of this scanning. It uses LinoColor software running on a Power Mac 9600/350. The images are saved as RGB, with embedded ICC profiles that make them ready for use—a process that is automated by AppleScript. "It's fantastic," said l'Anson. "It works beautifully."

Lonely Planet generates all its own monitor and scanner profiles, and is currently conducting press trials to develop press profiles too. At this stage the images are only for use by Lonely Planet designers, but the system is being further developed to eventually sell images online. Andrew Watt of ColourFast Systems in Melbourne is responsible for the installation. He said Lonely Planet's database was custom made using Imation's Media Manager, linked to Microsoft SQL server. "It's constantly being developed, along with the ecommerce system," said Watt. "But for the production work the system was installed, people trained and scanning commenced within a week."

Record Stop Run Check Syntax

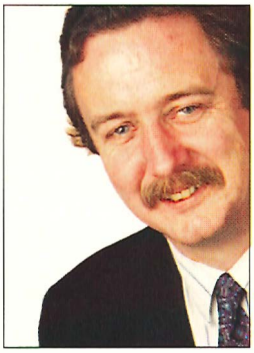
```
on adding folder items to this_folder after receiving added_items

    set OKfiles to 0
    set problemFiles to 0
    -- set a couple of counters to zero

    repeat with currentpic in added_items
        -- cycle through each individual file added to the folder

        try -- tell applescript to try to do this set of commands
            tell application "ColorSync Extension"
                set matchProf to default CMYK profile
                match (currentpic as alias) to destination matchProf saving in ("Brains:CMYK Pics:" as alias)
                --save a new file to the CMYK folder on my hard disk "Brains"
            end tell
            set OKfiles to OKfiles + 1
        on error -- if there's a problem then do this instead
            set problemFiles to problemFiles + 1
        end try
    end repeat

    tell application "Finder"
        open folder "CMYK Pics" of startup disk
    end tell

    if problemFiles = 0 then
        display dialog "All " & OKfiles & " files converted successfully!" -- do this if everything's OK
    else
        display dialog "Problem with " & problemFiles & " files. " & OKfiles & " files converted successfully"
        -- do this if something went wrong with one or more files
    end if
end adding folder items to
```

Figure four (far left): Apple's Match to CMYK is an AppleScript for ColorSync, installed by default with Mac OS 8.5.

Figure five (right bottom): A second AppleScript for ColorSync, written by your correspondent.

Off THE Net

When companies collide



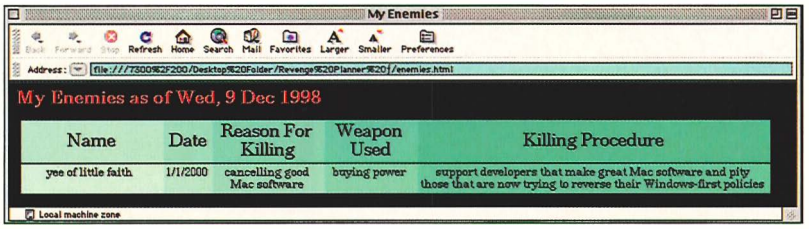
News and software from the international networks, collected by Frank O'Connor.

Point your web browser at the AusMac Archive <www.ausmac.net> to download the software in this column.

AOL and Netscape should be a formidable alliance. Look at their respective strengths. One operates the biggest proprietary yet internet-based network in the world, and has spent years fine tuning its access software to make it as elegant and user-friendly as possible for relatively naive users. This has paid a handsome dividend in a huge and loyal clientele. The other is at the forefront of internet-tools development and has a massive end-user base of its own. Their merger sheds a whole new light on the future of the net. I'll be interested to see how AOL Australia goes—word is this division won't initially cater for the Mac.

The Mac OS 8.5.1 update didn't take long to appear, did it? Personally, I'm always updating my stuff from the servers at <ftp.apple.com>, but it's nice to see the lads and gals at Cupertino nailing the various nasties so soon. From what I can see it mostly fixes possible disk I/O problems and memory leaks. Download your copy from <www.apple.com.au/documents/whatsonftp.html>.

After releasing its latest G3, Apple should be closer to releasing its G4 machines. Your humble correspondent is saving his hard-earned pennies to buy one, and justifying the same to his better half on the basis of, "But, Hon, I gotta have one. My readers demand it". I won't bother you with the anatomically impossible suggestions she has made concerning your good selves.



Revenge Planner is a database of vindictive intentions that can export its contents to HTML for viewing in a web browser.

The AusMac Archive had a very busy day when Anarchie Pro 3.5 was released. In 24 hours, 5.6 gigabytes were zonked off the server. Whether this was indicative of a massive upsurge in site (and sitemeister) popularity or simple eagerness by users to lay their hands on the latest Anarchie is a matter of hot debate at the moment. Grant's a nice bloke, but...

Publicly distributable software

System extenders. I recommend Natural Order, which sensibly sorts items that have numbers in their names when you choose View by Name from the Finder. Magic Menu is a sort of Now Boomerang replacement, and if MM isn't your cuppa tea, try Title Pop. View 8-er and System 8-er give System 7 a real Mac OS 8.x look. With Prestissimo you can control all the Mac OS 8.5 features including the tear-off application palette, keyboard shortcuts and scroll bar appearance. The Mac OS 8.5 Application Switcher is cool, but Application Switcher Editor makes it cooler.

Utilities. Clean Install Assistant makes migration from earlier system versions to Mac OS 8.5 much less painful. Kaleidoscope—the user-interface customiser—is now Mac OS 8.5 compliant. There are heaps of neat Sherlock plug-ins and managers out there. I like Sigerson and Sherlock Sets, both neat sets managers. I also like Banana Peeler and Sherlock Add Remover, both of which remove those pesky banner ads from your searches. Data Rescue is a cool file-rescue utility that seems to work. ScrapIt Pro—the world's greatest Scrapbook replacement—is out in a new version. MacLocksmith is a useful little file encrypter. Find Text and Find In Files are useful if you're not using Sherlock.

Updates. Nab the latest SpeedDoubler 8.1.2 at <www.connectix.com>.

Internet. As I mentioned above, the latest Anarchie Pro is a must-have for FTP or HTTP work. For Sherlock wannahaves, Web Finder is a nifty browser addition that can hit pretty well any search engine there is, and it works with Mac OS 8 and 8.1. Netscape Cache Control lets you use a RAM rather than disk cache with Navigator or Communicator, delivering a big improvement in performance—you'll need MacPerl 5 to run it, though. Savitar is a cool VR Telnet client.

Graphics and sound. If you've got an Agfa, Apple (QuickTake 200), Epson, Fuji, Leica, Nikon, Olympus, Sanyo or Toshiba digital camera, you need CamerAid. Player Pro's latest version is the bees knees for sound freaks—255 instruments, 254 sound channels, heaps of effects and Mac OS 8.5 ready like you wouldn't believe. Ultra Recorder is another option that lets you play, record and convert sounds. Gerry's Attraction displays a Rossler or Lorenz Attractor in 3D, and even has 'fly through' features. I love OneApp CineSlider's capabilities for creating eye-opening presentations and projections. Think of it as PowerPoint on steroids.

Programming. Leonardo is an interesting approach to C programming which allows you to execute and debug code on a reversible virtual processor. It's got other neat features as well.

Applications. Web Confidential is a cool repository for those passwords, user IDs, registration keys, serial numbers and the like. It does all that, with encryption. NewNotePad gives you a monster multi-level alternative to Apple's Note Pad. Use StatDoctor if you want to improve the old golf game. Text Cleaner Lite is a cool prepress or web-text converter than can massage any text into compliant formats.

Games. Gardyloo Golf is a game in which you can accidentally hit civilians with your clubs, set fire to the landscape, and interact with goblins. Sounds like a normal day on the course for me.

Weirdware. Revenge Planner is a database to keep track of your enemies and the nefarious methods you'll use to wet on their Weeties.

DUAL SPEED 10/100 ETHERNET LiteOn HUBS

The LiteOn LF66xxSB Series are a range of 8, 12, 16 and 24-port 10/100M auto-sensing hubs. The LF66xxSB Series provide an easy and cost-effective transition to Fast Ethernet. They give users 10/100 Mbps dual-speed flexibility, scalable expansion, and the most competitive price for plug-and-play connection of Ethernet and Fast Ethernet.

From $699 inc.tax

The LiteOn LF66xxSB Series hubs auto-negotiate the speed with the connected nodes and create independent 10Mbps and 100Mbps segments. No configuration setting is necessary, and Ethernet and Fast Ethernet users can be physically located anywhere on the network and communicate with each other. With Ethernet/Fast Ethernet support at the port level, the user can deploy 100Mbps when and where needed, and still run 10 Mbps on some desktops on the network. Stackable in-groups of 6, the hubs allow users to gradually add ports as their network expands. Users can start with a single hub, then add units to eventually reach 48/72/96/144-ports per stack, without incrementing the repeater counts.

PRODUCTS

Part#	Description	Wty.	RRP Inc
LF6408SB	8 Port 10/100 Mini Dual Speed Hub - Stackable	Life	**$699.00**
LF6416SB	16 Port 10/100 Mini Dual Speed Hub - Stackable	Life	**$1,065.00**
LF6608SB	8 Port 10/100 Dual Speed Hub - 19" Rack/Stackable	Life	**$829.00**
LF6612SB	12 Port 10/100 Dual Speed Hub - 19" Rack/Stackable	Life	**$989.00**
LF6616SB	16 Port 10/100 Dual Speed Hub - 19" Rack/Stackable	Life	**$1,225.00**
LF6624SB	24 Port 10/100 Dual Speed Hub - 19" Rack/Stackable	Life	**$1,579.00**

* Pictures for illustration purposes only

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BORN-AGAIN

PUT NEW LIFE INTO YOUR OLD MAC WITH ULTRAFAST G3 UPGRADE CARDS. BY CAMERON CROTTY

You may not want to admit it, but your beloved Power Mac—the one that was absolutely screaming-fast when you bought it a few years ago—is starting to look a little shabby. Even if you've kept its case free from grime, you can't deny that the PowerPC 604 processor inside is getting long in the tooth by computer-industry standards. Buy a Mac one day, and it's obsolete the next—right?

Not anymore.

On most PCI-based Power Macs, that old PowerPC 604 processor sits on a removable card. Replace that card with one that houses a modern G3 processor, and you'll make your Mac young again. The last time we looked at these upgrade cards, they were relatively new on the market and were both quirky and costly (see 'Quantum leap', July 1998). But these days, G3 upgrade cards have come of age. They're faster, more stable, and much more affordable than they were just a few months ago.

To get the details about just how much of a speed boost an upgrade card can give your system, Macworld Lab tested 14 upgrade cards ranging in speed from 300MHz to 400MHz and found impressive performance boosts and some remarkable bargains.

So don't feel bad about that old Mac you're using. It's about to get a new spring in its step.

New life for old Macs

Upgrading a Mac by adding a new processor card isn't really a new idea—Macs that are upgradable via new processor cards have been around for some time. But it wasn't until the G3 processor arrived that upgrades became a big deal.

The G3 (also called the PowerPC 750) is the first PowerPC chip designed specifically to work with the strengths and weaknesses of the Mac OS—resulting in a huge difference in performance. A G3 processor is clearly faster than a 604 processor running at the same megahertz, and as new chips come out, the speed of the G3 keeps growing by leaps and bounds.

When Macworld Lab last looked at G3 upgrade cards, 333MHz chips were just on the horizon. Now 400MHz chips are all the rage, with even faster ones to come.

Benefiting from a copper-based production process pioneered by IBM, this new generation of ultrafast G3s can run at high speeds while using much less energy. The result: A 400MHz card dropped into a standard Power Mac 9500/132 can triple that vintage Mac's speed.

In the details

Transforming an old Macintosh into a G3 powerhouse may seem like black magic, so here's a quick refresher on some basic concepts.

Upgrade cards involve three different parts of your computer: the processor, the cache and the system bus. The processor—the PowerPC chip—is your Mac's brain. This brain communicates with the rest of your Mac—including the RAM, ROM and peripherals—via the system bus.

The processor stores frequently used software instructions in the cache, a block of high-speed RAM, where those instructions can be accessed much more quickly (at a rate determined by the speed of the cache bus) than if the processor had to retrieve them from RAM via the system bus.

Upgrade cards work by accelerating all three parts of this hardware relationship. Manufacturers begin with a faster processor and add a speedier—and sometimes larger—cache.

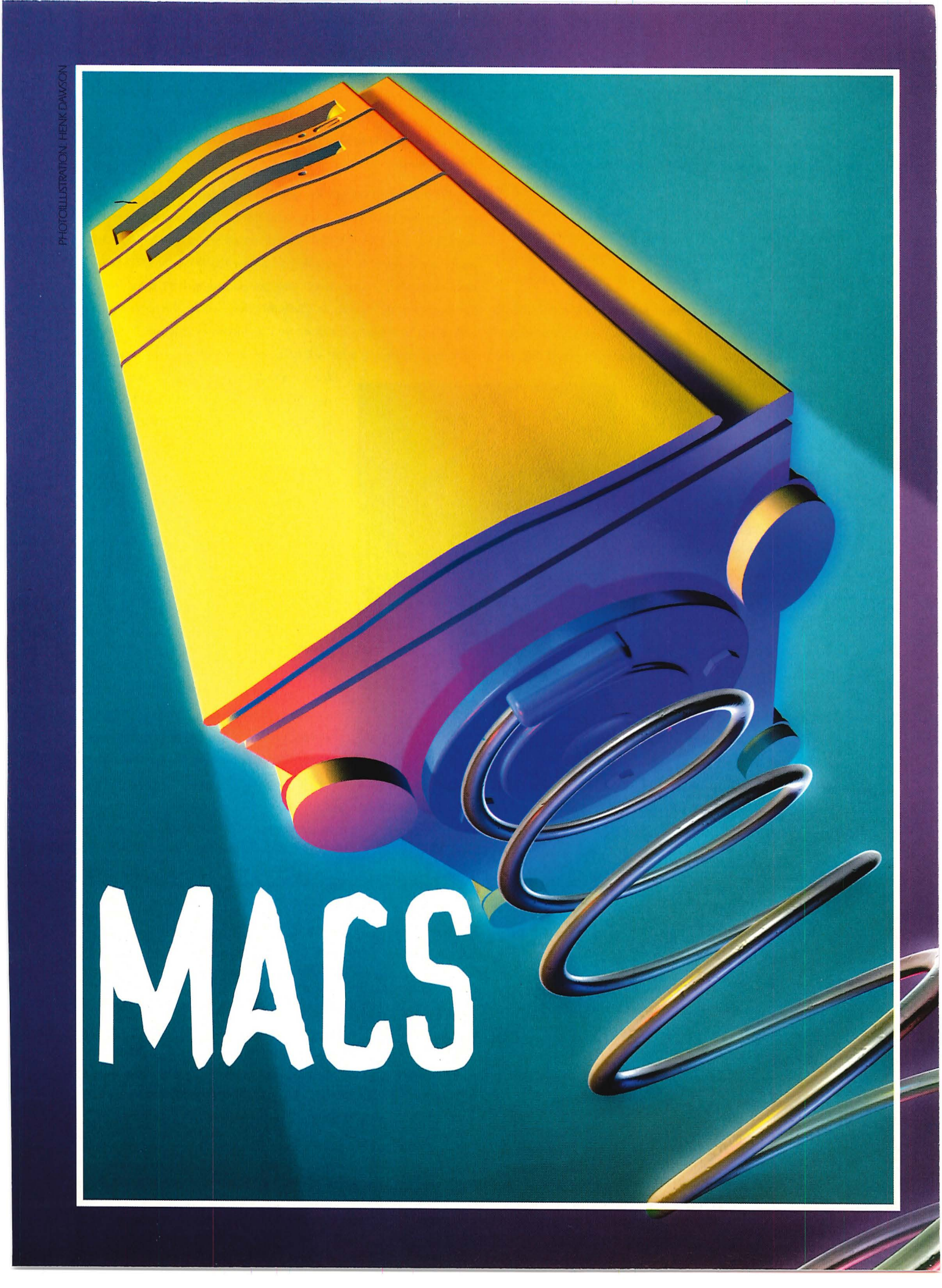
Card manufacturers also add controller chips that accelerate the entire system bus to run in tune with the faster processor. Mount the new processor, cache and controller chips on a circuit board, and you've got an upgrade card.

Should you convert?

So you want a faster Mac. Who doesn't? But before you buy, you should consider if buying an upgrade card is the right decision for your particular situation.

Of course, buying an upgrade card should always be a less costly option than buying a new Power Mac with a processor of the same speed. But price and speed aren't the only factors in the equation.

Upgrade cards are great at giving current hardware a new lease on life, but they don't actually make your Mac a new system. When you buy a new G3 Mac from Apple, you're not just getting more

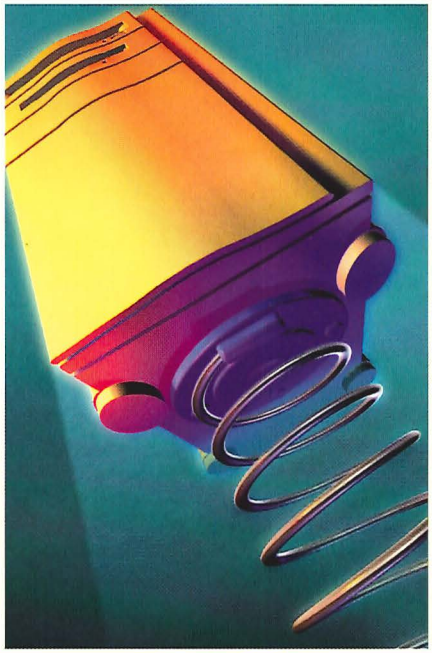


PHOTOILLUSTRATION: HENK DAWSON

MEGAHERTZ ISN'T EVERYTHING / ALTERNATE UPGRADE STRATEGIES

Installing a G3 processor in your old Mac will certainly add pop to your processing. But although it's the most dramatic enhancement you can currently make to your Mac, it's only one of the improvements that can make your old Mac feel young. In fact, you may not be able to make the most of that new G3 processor if the rest of your system is still factory-issue. For a few dollars more, you can squeeze better performance out of your Power Mac by adding these simple upgrades.

HARD DISK. How quickly applications launch, windows and documents open, and documents are saved depends not only on your processor but also on the speed of your hard disk. The faster your hard disk, the more quickly these operations occur. In fact, a G3 upgrade in an extremely old Power Mac may be severely hampered by a slow hard disk, with the processor having to constantly wait for the hard disk to catch up to it.



SCSI disks come in a variety of speeds. Slower drives run at 5400rpm. Faster, AV disks operate at 7200rpm and higher. Adding one of these faster disks to your Mac will increase overall performance.

Also, most mid-range and high-end Power Macs—the 7300, 7500, 7600, 8100, 8500, 8600, 9500, 9600, and many 604- and 604e-based clones—have an internal SCSI-2 bus and an external SCSI-1 connection. Macs with internal SCSI-2 offer a transfer rate of 10MBps, compared to the 5MBps transfer rate of Macs with SCSI-1. If you plan to add a hard disk to one of the former, consider an additional internal SCSI-2 disk that takes advantage of the faster bus.

RAM. In and of itself, RAM doesn't speed up your Mac. In most cases, for example, having 64MB of RAM won't make Microsoft Word run any faster than if you had 32MB of RAM. However, there are some areas where additional RAM can be of assistance.

Adobe Photoshop first processes and stores images in RAM. When it runs out of RAM, it stores information on your hard disk. Because your machine can transfer information into and out of RAM much more quickly than it can to and from a hard disk, it's a good idea to have as much of this information stored in RAM as possible. More RAM equals more RAM storage, which leads to much faster Photoshop processing.

Apple's virtual memory and Connectix's RAM Doubler ($55 RRP, Firmware, 02 4721 7211, fax 02 4721 7215) may be modem miracles, but they don't offer the greatest speed. As with Photoshop, if you can store information in RAM rather than virtual memory, your Mac will be more responsive.

CD-ROM DRIVE. Through the years, you've seen CD-ROM speeds increase from 2x to 4x to 16x to 24x. But do these increases in speed really make your Mac faster? If your current drive is only 2x or 4x, you'll notice a difference by upgrading to a new CD-ROM (or DVD-ROM) drive—QuickTime movies won't skip frames or drop their audio tracks. But if you already have an 8x CD-ROM drive, making the move to 24x isn't going to radically transform your CD-ROM experience. The main advantage of having a fast CD-ROM drive is that you can copy data from a CD-ROM disc to your Mac more quickly, a boon if you tend to install a lot of software or routinely copy large chunks of data from disc to disk.

FASTER SCSI. Although adding an internal SCSI-2 disk to your Power Mac provides you with sprightlier data-transfer rates, there are a few limitations. Your Mac has only so much space for internal devices, and your external devices are limited by the slower external bus.

To get truly fast external SCSI, add a fast SCSI card to your PCI Mac. Adaptec's PowerDomain series of PCI SCSI cards, for example, provides transfer rates of up to 40MBps—four times the transfer rate of SCSI-2. Some of these cards also allow you to attach more than seven SCSI devices to your Mac. (But you should be wary of potential incompatibilities between some G3 upgrade cards and fast peripheral devices such as SCSI cards.)

VIDEO CARD. An accelerated video card can dramatically increase display speeds on your monitor. Many of these video cards not only speed up screen redraws and offer greater colour depth and resolution but also accelerate QuickTime playback and more smoothly display 3D graphics. These video cards usually carry between 4MB and 8MB of memory.

If you're a gamer and wish to boost the speed of such games as MacSoft's Quake and Unreal, which support 3D-acceleration hardware, you can add a video card that additionally supports this kind of acceleration. Micro Conversions' Game Wizard and ATI's Xclaim VR support the two competing acceleration standards: Glide and RAVE, respectively (see 'Comin' at ya,' January 1999).

— Christopher Breen

megahertz. You're also getting the latest technology—fast CD-ROM or DVD-ROM drives, faster hard disks with greater capacity, and a slew of internal improvements that enhance the speed of the G3 processor in ways your old Mac simply can't. And if you buy a new Mac, you'll still have your old system to use somewhere else.

Software compatibility is also a major issue when it comes to buying upgrade cards—just ask those who equipped their Quadras with PowerPC upgrades and now cannot switch to Mac OS 8.5. Apple has also refused to guarantee that Mac OS X will run on any Mac not originally based on the G3 chip. If you're counting on running that version of the Mac OS once it becomes available, don't count on using an upgraded Mac to do so.

On the other hand, speed now may be all that matters to you. After all, by the time Mac OS X is released, even today's Power Mac G3s may be considered slowpokes. If so, buying a G3 upgrade card now might give you enough speed to hold off on buying a new Mac until OS X appears.

Protecting your flock

Perhaps the most important technical issue that you need to weigh when deciding between an upgrade card and a new system is reliability. It doesn't matter how much time a faster Mac will save you if you end up wasting that time rebooting or troubleshooting.

The good news is that upgrade-card manufacturers have gotten a lot better at producing easy-to-install cards. Although the physical installation process has always been fairly straightforward, the last time we tested upgrade cards, we had to jump through flaming compatibility hoops to get several of them to work properly.

BRAIN TRANSPLANT / NOT BRAIN SURGERY

Upgrading your Mac is a do-it-yourselfer's dream: the materials are relatively inexpensive, and the procedure is simple. Here are a few tips to help you along the way.

PREPARATION. The most important hardware components are your Mac (unplugged) and your upgrade card. Don't take the card out of the bag before you put on a static-grounding strap, a device you wear on your hand to protect the card from static-electricity damage. If your card doesn't come with one, buy one. A small screwdriver may also come in handy. On the software side, you'll need the disk that came with your upgrade card. Once you have your equipment in place, prepare yourself for the installation by carefully reading the manual—the whole thing. Many companies provide helpful illustrations or pictures that clarify the installation process. Don't risk damaging your computer or card by skipping the manual and trying to figure out the process on the fly.

SOFTWARE. Before you start unplugging your computer, be sure to install the software that came with your card. If you don't do this up front, you may have trouble later—your upgraded Mac might not boot without the proper software in place.

OLD CARD. Once you are properly grounded, you can open your Mac (following the instructions in the upgrade-card manual). The processor card's location varies depending on what system you have, but the card's size and shape are always the same. The card is 8cm high and is plugged into a slot near the centre of the motherboard, covered by a bulky metal attachment called a heat sink, which aids in keeping the processor cool.

NEW CARD. Now you can take your new processor card out of its antistatic bag and install it. The edge of the card should have a notch for proper alignment. Pop the card into the slot gently—don't ever force it. Be sure that the card seats evenly all the way into the slot, covering the gold edge contacts.

RESET SWITCH. After you have installed your new processor card, look on the motherboard for a small circular button in a square housing—it's the processor-reset switch, and it should be near one of the ends of the processor slot. Press the button, and hold it for a few seconds. (When you reboot, your Macintosh clock will need to be reset—that's the price of upgrading.) Then close your Mac, hook it back up, and boot up your new G3 Power Mac.

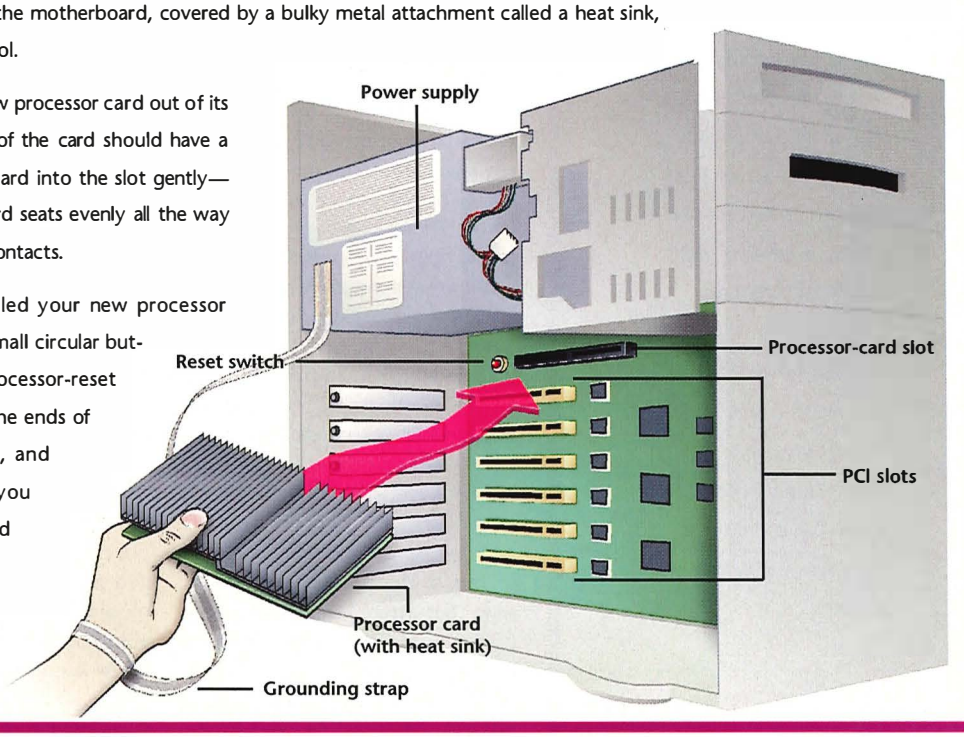


ILLUSTRATION: ARNE HURTY

This time around, our testing went more smoothly than ever before. We installed each card and its accompanying software without a fuss, and our upgraded Power Mac 9500 ran all our performance tests with nary a hitch.

However, there still appear to be some incompatibilities between certain upgrade cards and particular products, especially peripheral cards such as Adaptec's SCSI cards and Dantz Development's Retrospect backup software. Macworld Lab attempted to replicate these incompatibilities by running a 300MB backup session with Retrospect. When we used internal SCSI, all the cards functioned normally. But when we used Adaptec's AHA-2940 Ultra Wide SCSI card, only upgrade cards from Newer completed the backup successfully.

Another issue that can affect your souped-up computer's stability is overclocking—pushing the processor on an upgrade card to faster than its rated speed. By using the switches found on many of these cards, it's possible to increase the chip and system-bus speeds until a 366MHz card—for instance—runs at 375MHz. Card manufacturers have often held this option out to users, all the while disclaiming responsibility for data loss or compatibility problems.

We can't stress this enough: Don't give in to the temptation to overclock. Computer components come with built-in margins of safe operation, and overclocking pushes your system right up to the edge of those margins.

Overclocking may make you feel like you're getting something for nothing, but the resulting performance increases are usually only about five to 10 percent. Is that extra fraction of speed worth risking irreplaceable creative efforts or your family's or business's financial data?

Cards in the crucible

Macworld Lab tested 14 cards from four companies: Mactell <www.mactell.com>, Newer Technology <www.newertech.com>, PowerLogix <www.powerlogix.com> and Sonnet Technologies <www.sonnettech.com>.

As usual, Newer Technology emerged as the heavyweight of the accelerator-card field. At most speed levels, this company's MAXpowr G3 cards are faster than their competitors. And Newer's software and documentation set the standard for the industry. The cards also appear to be free of the compatibility problems that affect some other companies' cards, thanks to a built-in hardware-based fix. Perhaps as a result of such diligence, MAXpowr cards tend to cost more than the competition—but the peace of mind they provide may be worth it.

When it comes to getting bang for your buck, it's hard to argue with the price and performance of PowerLogix's PowerForce G3 cards. These cards are among the fastest at every chip-speed level, and their prices are competitive. However, PowerForce cards could use better documentation.

The other companies' cards were less impressive: Some of Mactell's cards come with extra fans—a non-essential extra (unless you ignore our advice and overclock the processor), and to install the fan, you've got to connect a separate power line to your Mac's motherboard. Mactell's cards, with the exception of the G3 PowerJolt 300/300, hold up fairly well in terms of price and performance, but the company offers mediocre documentation.

Sonnet Technologies' Crescendo G3 boards landed at or near the bottom of every performance test, and their prices were about average. However, Sonnet was the only company other than Newer to directly address incompatibility issues—in its case, with a software fix.

The bottom line

If there's anything we learned from our revisiting of G3 upgrade cards, it's this: The fastest available upgrade cards are always too expensive for most users. The slower the card, the better the value.

Only the most dedicated speed freaks should even consider 400MHz processors. Unless you simply can't upgrade to a Power Mac G3 for compatibility reasons, spending $3000 instead on a 400MHz upgrade card doesn't make sense. If you're not saddled with compatibility concerns, you're better off spending a few hundred dollars more and buying a speedy new Mac. Even the 366MHz cards we tested are just too expensive for us to recommend to most users.

However, neither would we recommend that you rush out to buy a 220MHz upgrade card—and most importer/distributors feel the same way, choosing not to offer these products through Australian retail outlets. Although such a card would provide a sure speed boost, the result would still be a Mac that's slower than any current Power Mac G3. Instead, consider a low-cost 300MHz or 333MHz card.

PowerLogix's PowerForce G3 300/150 offers good speed at a price comparable to that of 250MHz G3 upgrade cards on the market. When we went to press, it was clearly the best buy of the bunch. But beware—the price of upgrade cards is extremely volatile. Smart buyers will want to phone several Apple retailers in their area to find the latest prices immediately before buying.

No matter what reason you have for speeding up that old Mac of yours, the good news is this: You can breathe new life into your old Mac for a reasonable price. Gone are the days when you bought a computer and then stood helplessly by as it aged and became obsolete. Thanks to the latest crop of fast and affordable G3 upgrade cards, your old Mac might just have a new lease on life.

Cameron Crotty is a freelance technology journalist.

READY TO ROCK / MACS AND COMPATIBLES READY FOR PROCESSOR-SLOT UPGRADES

APPLE COMPUTER
Power Macintosh 7300
Power Macintosh 7500
Power Macintosh 7600
Power Macintosh 8500
Power Macintosh 8600
Power Macintosh 9500
Power Macintosh 9600
Workgroup Server 7350
Workgroup Server 8550
Workgroup Server 9650
DAYSTAR DIGITAL
Genesis series
POWER COMPUTING
PowerCenter series
PowerCurve series
PowerTower series
PowerTower Pro series
PowerWave series
UMAX
Pulsar
Pulsar SP

14 G3 SPEED DEMONS / SPECS AND AVAILABILITY

PRODUCT	RATING	AVAILABILITY	PROCESSOR SPEED	CACHE-BUS SPEED	CACHE SIZE	COMMENTS
Mactell G3 PowerJolt 366/244	4	$3470 ($2844 ex-tax), distributed by AD&D: 02 9810 2422, fax 02 9810 0422 and <www.adds.com.au>.	366MHz	244MHz	1MB	Faster cache doesn't necessarily mean faster card.
Mactell G3 PowerJolt 333/222	4	$2362 ($1936 ex-tax), distributed by AD&D.	333MHz	222MHz	1MB	Not the fastest card, but competitively priced.
Mactell G3 PowerJolt 300/300	3½	$3051 ($2501 ex-tax), distributed by AD&D.	300MHz	300MHz	1MB	300MHz cache-bus speed not worth the price.
Mactell G3 PowerJolt 300/200	3½	$1779 ($1458 ex-tax), distributed by AD&D.	300MHz	200MHz	1MB	Good performer,
Newer MAXpowr G3 400/200	NA *	$6049 ($5144 ex-tax), distributed by Lidcam: 03 9820 9077, fax 03 9866 1245 and <www.lidcam.com.au>.	400MHz	200MHz	1MB	Fastest card of the lot, but quite expensive.
Newer MAXpowr G3 333/166	3½	$3814 ($3242 ex-tax), distributed by Lidcam.	333MHz	166MHz	1MB	Quality card, but not inexpensive.
Newer MAXpowr G3 300/150	4	$2380 ($2024 ex-tax), distributed by Lidcam.	300MHz	150MHz	512K	Good performance despite small cache.
PowerLogix PowerForce G3 400/200	NA *	$2895 ($2373 ex-tax), distributed by Music Technology: 02 9369 4990, fax 02 9387 8676 and <www.musictechnology.com.au>.	400MHz	200MHz	1MB	Least expensive of the 400MHz cards.
PowerLogix PowerForce G3 333/166	4	$1995 ($1635 ex-tax), distributed by Music Technology.	333MHz	166MHz	1MB	Good value, and speedy card.
PowerLogix PowerForce G3 300/150	4	$1495 ($1225 ex-tax), distributed by Music Technology.	300MHz	150MHz	1MB	Slower bus speed, but a great value.
Sonnet Crescendo G3 400/200	3½	$4083 ($3347 ex-tax), distributed by Macsimise: 03 9521 4877, fax 03 9521 4977 and <www.macsimise.com.au>.	400MHz	200MHz	1MB	Disappointing performance at a high price.
Sonnet Crescendo G3 366/183	3	$3266 ($2677 ex-tax), distributed by Macsimise.	366MHz	183MHz	1MB	Slower than Mactell's (discontinued) 366/244 card.
Sonnet Crescendo G3 333/166	3	$2584 ($2118 ex-tax), distributed by Macsimise.	333MHz	166MHz	1MB	Not enough performance for the price.
Sonnet Crescendo G3 300/150	3½	$1906 ($1562 ex-tax), distributed by Macsimise.	300MHz	150MHz	1MB	Good value, but not as good as PowerLogix's 300/150.

EDITORS' CHOICE

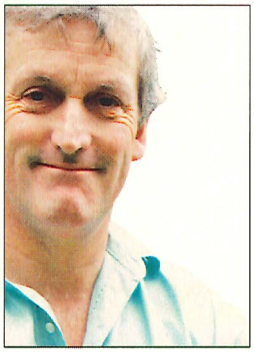
This card was the best value at press time—but since upgrade-card prices are so volatile, be sure to check current prices before you buy.

NA = not applicable.

** Product was not shipping to customers at press time.*

ReadMe

Reading for net users



Computer books, reviewed by Keith White.

Typography and travel online

Typography and travel this month, first with Joseph T Sinclair's scholarly *Typography on the Web* and then with Noah Vadnai's breezy *Travel Planning Online for Dummies*. Both titles are solidly black and white and come with the now obligatory CD.

Sinclair has a track record in type stretching over 20 years and is currently an expert in text-based multimedia web authoring. His 500-page softback ranges far and wide from the basics of hard-copy typography through to the latest software and coding techniques for getting that crisp print up onto the web. An avowed Windows NT 4.0 user, Sinclair shamefully confesses to never having used a Mac. That said, there's not a trace of anti-Mac sentiment anywhere in the book. The only real downside of this eerie, Mac-free environment is that the greyscale screenshots of Windows dialogue boxes are hard to decipher.

Typography on the Web opens with a discussion of print tradition—legibility, typeface classifications and standard layout practices. Interesting and nicely written.

Readability soon emerges as a key issue throughout the book, and although Sinclair provides a great deal of seemingly objective evidence to support his views, he doesn't really deal with the human variables. Lack of interest and fatigue, for example, can affect a reader's response—no matter how careful the font selection and layout. And so it is with his readability rating system for text on the web. Sinclair reduces the process to a simple set of mechanical rules, ignoring the complex human factors.

Moving on, there's a section on how type works on a computer—PostScript, TrueType and now OpenType. Then it starts to get tricky. Like this, for example:

"Because HTML is a DTD of SGML and because XML is a subset of SGML, a good place to start understanding XML is with the HTML you already know" (p113).

Heavy going, but all is revealed. First, HTML and special HTML tricks to make the most of your print. Then, the intricacies of Cascading Style Sheets (CSS). Yet, *Typography on the Web* is not a technical manual, but a broad overview of how it all works. Complex, yes, but not with too much detail.

Then Sinclair attempts to explain the typographic implications of the current Netscape/Microsoft crossfire and outlines the rapid developments underway for the forthcoming version 5.x web browsers.

Bitstream's TrueDoc technology is explained in detail and compared point-by-point with Microsoft's WEFT font-embedding technology.

The last section opens with the impact on typography of Dynamic HTML, NetTV and Java, and closes with printed examples of traditional fonts, chosen for their readability.

The CD contains trial versions of authoring programs, fonts, and a links to web-typography sites. There are also demonstrations of techniques covered in the book. This is an attempt to get around the inherent weakness of *Typography on the Web*, which the author admits: how do you adequately demonstrate on a printed page the merits of text as it will appear on a computer monitor? The resulting layout is uninspiring and—ironically—not particularly easy on the eye.

Which makes *Travel Planning Online for Dummies* a refreshing change. The author, Noah Vadnai, is billed as senior travel channel producer for NetGuide Travel Guide. He has the truly tough assignment of backpacking around the world and then writing about it.

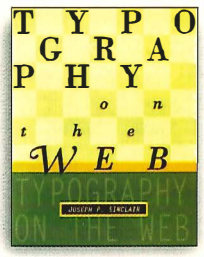
I admit to opening this book with two preconceptions: internet books, particularly those that list pages of URLs, are out of date before they hit the shelves; and, such books are unnecessary for anyone who can use a search engine.

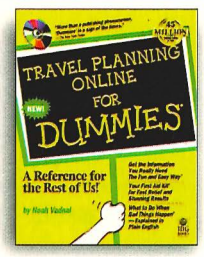
Wrong on both counts. First, by featuring established travel and related organisations with an ongoing net presence, Vadnai gives his book durability. Second, there's enough information, tips and cautions to delight even the seasoned internet traveller.

Search city maps, find restaurants, book cruises or go rafting. Read travelogues, get onto Eurorail, find the nearest ATM in Singapore or get the lowest price for a hotel room in Honolulu. Stay connected as you roam, to check out the weather, brush up on your Italian, or chat with fellow travellers.

In the middle of the book there's a directory—30 yellow pages of the best sites with a useful thumbnail description of each. On the CD you get an HTML file of all the links in the book as well as some nifty shareware travel aids.

Easy to read, the 330-odd pages are neatly laid out for thumbing through, and buoyed by Vadnai's warm, personal style. There's some American bias, particularly in booking air travel, but there's plenty there for Australian globetrotters or for virtual travellers who book with Armchair Airlines.





	Typography on the Web	Travel Planning Online for Dummies
Title		
Author	Joseph T. Sinclair	Noah Vadnai
Publisher	AP Professional	IDG Books
ISBN	0 126 45545 7	0 764 50438 x
RRP	$95.00	$54.95

Macintosh Computers After XMAS SALE

PPC 9600/300
604e Mach V processor
FULL tower,
6 PCI slots,
12 DIMM slots
8mb VRAM Twin Turbo
128 bit video card
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64/4gb: **$3350**
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•16/2gb 12x CD:**$985**
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•16/16/2gb
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PPC 5xxx series
All-in-one machine
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speakers, system 8:
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8/1gb CD: **$750**
•5300/100 24/1.6gb
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Performa5500/225 mhz
603ev processor, 16/2gb CD
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PowerPC 5500/250mhz
All-in-one black
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33.6 modem
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1 PCI slot
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PPC 7500/150 mhz
604 processor
32/1gb CD 256 k cache
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•PRICES subject to change without notice depending on stock availablility and supply
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Powerbook wall-street
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32/2gb 14.1" TFT. up to 1024* 768 reolution.
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Powerbook G3 292
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1024*768 pixels/inch,
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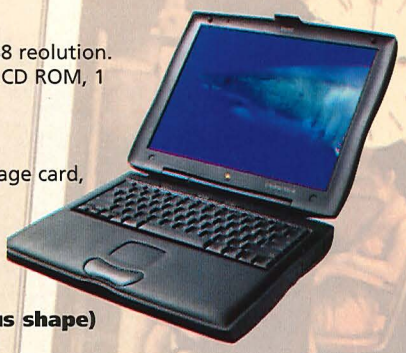
Floppy Drive module,
Brand New 1 year warranty
$6950 WOW!
Powerbook G3 250 (previous shape)
32/5gb 12.1" TFT screen : **$3950**



A3 PRINTERS

Xante Acccel-a-writter 8300
FULL BLEED A3 11"* 17"print out
Post script level 3
AMD 29040 RISC processor
Amazingly clean, fast and true
1200 dpi out-put
Ethernet network
OPTIONAL SCSI I
NTERNAL HD
Brand new
end of stock sale
was$5500, now:
$2650

Xante 8200
AMD 29040 RISC
16 pages per minute
48 mb RAM
ETHERNET, SCSI
1200 DPI
FULL BLEED A3 11"*
17"print out
Brand new in box end
of stock sale: was $5000, now only:
$2 50

(for more info about these printers, check them out on the internet at: www.xante.com to see how these printers can work for you)

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(recommended buy for students and anyone on a budget in need of a good computer that will be used for spread-sheets, word processing, data base, Internet and some games)

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PPC 6100/66 mhz
601 PPC processor
24/250 mouse keyboard: **$475!**

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603e processor
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PPC 6260/160mhz
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Mac operations

ILLUSTRATION: PAT CAMPBELL

FINDING THE JOB-MANAGEMENT SOFTWARE

get it

THAT'S RIGHT FOR YOU. BY ROSE MICHAEL

together

There's a particular look you begin to recognise: The eyes glaze over and the cogs inside the skull make an almost audible whirring as they chug into gear. Have you seen it? Most frequently sighted on someone asked for a quote, and now. Or perhaps you've been the one standing there, frantically trying to calculate the hours required to turn the job around, the cost of stock, the printer's prices, minus sales tax because they're a government body, plus a 45 percent markup because they're a pain to work with.

And it isn't just costings that are missing the mark, it's contact details and time sheets, deadlines and monies owing. Designers are big on design—it's what they do—but when it comes to job management, most could use a hand.

Whether you're a small business getting bigger or a large company looking to improve your return, there's job-management software that's right for you. So stop cramming it all into your cranium or scattering it over scraps of paper and unlinked files. Take advantage of the hardware hulking on your desk, and run one of these Australia-made programs instead.

Graphic Arts Studio Manager 2

Originally launched in September 1997, Graphic Arts Studio Manager is now available in version 2.0. Both it and Pre Press Studio Manager can cost all elements of a job and its overheads, but the latter also covers products for direct sale such as scans, bromides and film. Both these FileMaker Pro–based systems are reasonably comprehensive and relate directly to how graphic designers work, according to its publisher, Price Wizard Software. They can issue wages on the basis of an hourly or weekly rate, generate payment slips, calculate tax, and account internal and external costs per job. And time sheets, which could only be entered live in version 1, can now be entered in four different ways: from the employees field, from the jobs field, directly from time sheets, or after the event.

The accounts records are based on job-completion dates (see figure one, over), rather than invoice date or payment-received date; this makes for more accurate profit monitoring. Users can also choose to allocate a percentage of overheads as a personal expense. This is particularly useful for those working from home. Initially, the two programs were geared towards home office workers, but now nearly all users are small businesses consisting of two to five people.

Both packages can print a variety of reports including a 'job profit reconciliation' which compares estimated and actual hours of work. Sales reports can be selected according to sales, services or customer (see figure two, over), and they are code protected.

While it's still necessary to create a job to set costs against, these programs can issue an invoice without creating a quote. This is handy for prepress bureaus that handle many fast-turnaround jobs and require over-the-counter service.

An additional feature is that any difference between the quoted amount and the suppliers' invoice will trigger a reminder notice when the client is invoiced. Users can override the notice (absorbing the additional cost) or add it to the invoice.

JobBag7

JobBag7 was the first job-management system commercially available for the Mac, according to its publisher, DB Developments. Its predecessor, JobBag3, was written in Omnis and reached market in 1987–88. The job-costing and accounts modules were shortly followed by the general ledger module in 1989. The job-costing module of JobBag7 went on sale in 1997 while the accounts and general ledger modules were released last year. JobBag7 Studio (as opposed to JobBag7 Enterprise) is a smaller version available for those without accountancy expertise. Both programs have broad appeal to businesses of three to 30 people.

At its heart, JobBag7 is a job-management system, but it includes strong accounting features in relevant areas. There were no links out to MYOB, DB Developments said, because JobBag7 ran its accounting records in similar detail to MYOB, and to a similar depth. Integrated with JobBag7's core job-management features is support for accounts payable, accounts receivable, cash accounting, bank reconciliations, cheque printing, periodic payments and general ledger (see figure three, over).

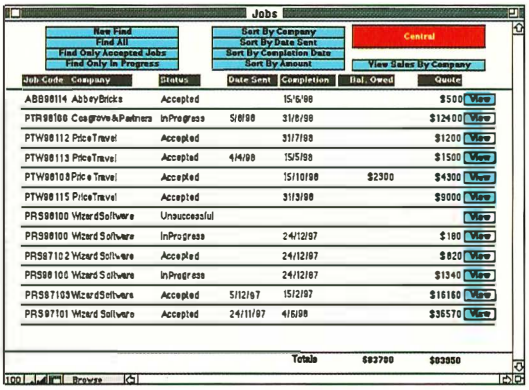
The JobBag7 system is made up of three core elements: job costing and management, accounts, and general ledger. The work list (which appears every time a job is selected) can be set, rather than constantly defaulting to all work in progress. All lists are soft-coded. The financials section offers a complete breakdown of monies owing and owed. Budgeted cost is compared with actual cost, value, budget and invoiced amount. The program is ready for the GST although it includes no payroll system as yet. The report options offered by JobBag7 are extensive. They can be selected according to job, date, employee (see figure four, over) or overdue tasks. The schedules and deadlines for each specific job are particularly accurate because normal business hours are specified when installing the program. If the deadline set is outside these hours, a warning will appear.

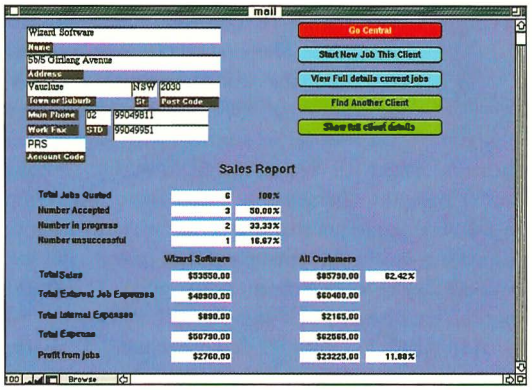
JobBag7 lets users enter standard rates, client rates, and any special rates applying to a particular job. If a fast-turnaround job deserves a 10 percent markup, every aspect of the job will get that surcharge, from labour to print to lamination to courier. The additional charge can be kept or overridden. Default job specs can be set for quotations and invoices.

Again, this ensures the accuracy of the estimation as well as saving on the duplication of data. An invoice can be generated at any stage, or not at all if it's not required. JobBag7 supports pre-billing and progressive billing.

Figure one (top left): The accounts records in Graphic Arts Studio Manager are based on job-completion dates, rather than invoice date or payment-received date.

Figure two (top right): Sales reports can be selected according to sales, services or customer (pictured) in Graphic Arts Studio Manager.





Currently JobBag7 has no correspondence or 'request for quotation' fields. Suppliers' quotations modules are being scripted and will be available for no extra cost. Other customisations will cost extra.

The general ease-of-use of the program is aided by the '?' icon, indicating help text, and the free word-indexing engine which searches under any category.

For standard job costing, one day of training is recommended at $900. Two days is suggested if personnel need to work through to general ledger.

Traffic Office Manager

The name says it all. Traffic Office Manager is a software package aimed at trafficking and managing the progress of a particular job as well as general office duties, according to its publisher, Cormoran Communication. The two-year-old program aims to save time by automating routine office tasks such as recording times, managing contact detail, and raising purchase orders, quotations and invoices. The difference between Traffic Office Studio Manager and Traffic Office Agency Manager is that the latter includes media costing and scheduling features.

The main menu of Traffic Office Manager, which appears when the program loads, sets up the five categories that provide the basis of the system: contacts and communication (including address book, contact manager, message pad and FastFax); new project estimating and proposals; production (work in progress, purchasing, time manager); and administration (including accounts).

Traffic has enough accounting features to get by—users have the ability to post receipts and credit notes, produce a 'manual invoice' without a job number, calculate a GST, generate statements, and use the brief payment-received list—but it's not primarily an accounting package. The additional purchase of PowerShift allows users to export data directly to MYOB, although the features of Traffic offer more flexibility than traditional regimented accounting systems.

Time sheets can be entered live or batch processed at the end of each day. Times are automatically linked to the job and invoicing to maintain an accurate record of hours under or over budget. The schedules the package produces are excellent: clear, comprehensive, easy to read and easy to follow. A bible for the studio.

Excellent contact management features include a diary, and a message pad which works like internal email. However, internal correspondence generated using the latter feature is not directly linked to the job with which it relates.

There are many different purchase-order templates including printing, prepress and general samples (see figure five). These lessen the error margin and save on time and effort. Quotes received can then be stored for future reference.

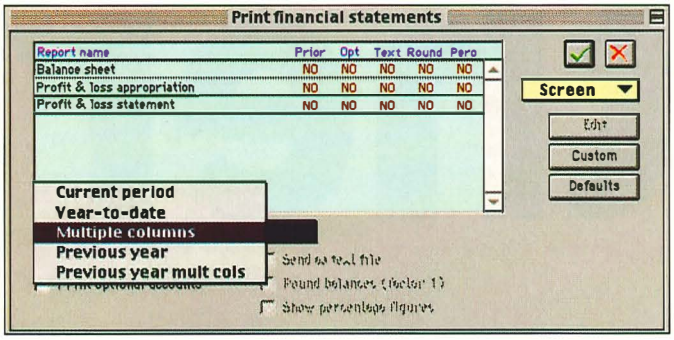
While Traffic is satisfyingly comprehensive, it can take some time to get your head around any job-management program, including this one. Cormoran recommends between 10 and 40 hours of on-site training, which comes at an additional fee of $100 per hour. Training CDs and an in-depth tutorial guide are included in the package, as well as free technical phone support. Cormoran is aiming to make Traffic Office Manager as close as possible to an off-the-shelf product.

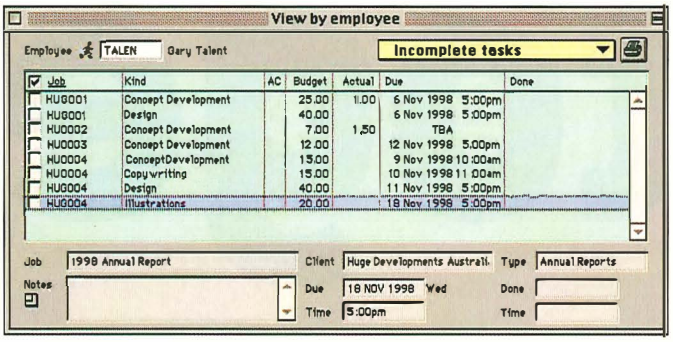
Agency Pro

Agency Pro is one of the more easy-to-use job management software packages on the market—which isn't to say it's lacking in features, according to its publisher, Designware. It's designed in a logical manner with a simple format that prioritises ease of use (its minimally-coloured interface is a relief). A standard menu appears down the side of every screen making the program straightforward to navigate.

Figure three (below left): Integrated with JobBag7's core job-management features is support for a range of financial records and reports.

Figure four (below right): The report options offered by JobBag7 can be selected according to job, date, employee (pictured) or overdue tasks.





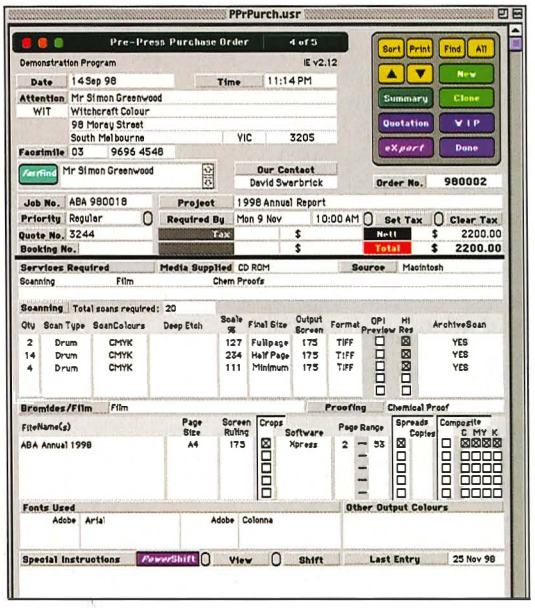


Figure five: There are many different purchase-order templates in Traffic Office Manager, including printing, prepress (pictured) and general samples.

The backbone of Agency Pro is its comprehensive job-costing abilities. The aim of the program is to monitor the real cost of a job as work progresses—rather than to supply a comparison after the event—so there's no possibility of any unforseen blowouts (see figure six, over). The package aims to increase the accuracy of your estimating abilities.

Agency Pro works to make every aspect of a job traceable and every member of the team accountable. For example, time and internal costs can be budgeted against a particular job, as well as external costs. However, recording internal costs—particularly when they are as common and as small as A3 colour copies or print outs—may seem like more work rather than less.

To accurately budget and cost hours against a job, staff can either log on or provide their hours to administrative personnel who enter it for them (such a system would also work for recording internal costs). The log-on system enables Agency Pro to deliver internal memos and establish authority limits with regard to purchase orders: this means the receptionist can approve a stationery order, but not a huge print run.

Agency Pro maintains an important differentiation between estimates and quotes. 'Work in progress' sets out all items at cost, with a generic markup (such as 40 percent). This markup is not profit—it is the cost of overheads. The estimate produced is the production cost. The client quotation can be prepared separately or by importing this estimate. Once generated, the quote can be printed, shown to management and approved. Before it is 'approved', it will print with 'draft copy' stamped across it—a neat way to avoid a common confusion.

In the bag / anatomy of the job-bag system

Walk into a printer, design bureau or advertising agency and ask for a job to be done—20,000 annual reports, for example—and chances are the company will stick your work in a bag.

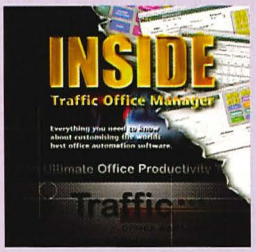
The job bag, as it's called, may be a brown paper number, or a resealable plastic sleeve, or a new record in a 'virtual job bag' database. Regardless, each bag will always be identified by a unique job number, carry a checklist of necessary tasks, and contain objects that could range from 35mm transparencies to letters of complaint.

Through time, job management has become increasingly computerised. Take the humble address book, for example. Once you create a contacts database in FileMaker Pro, it's a simple step to add layouts for printing quotes, invoices and so forth. To send a quote to Joe Bloggs, simply find him, hit the Quote button, then type in the few words and numbers that are not built into the layout. The efficiency gain is slight, but unmistakable.

Now, imagine a large room full of job bags, each stored in its own plastic sleeve, racked five or six high in order of job number. To find an old quote you would need the number of the job bag that held it. In times gone by, this would involve fossicking through a box of index cards. Today, you'd find Joe Bloggs—and the numbers of each relevant job bag—through another simple database.

You could actually fish out the plastic sleeve that contains the paper bag that contains a printed copy of the quote you're after, but if the contacts and job-bag databases were connected it would be quicker to view the quote on-screen with the click of a button. For a hard copy, hit print.

The ease-of-use of FileMaker Pro has encouraged many production managers to create their own contact and job-number databases. The more adventurous have even linked the two, and added further production databases to the mix.



Robert Young's *Inside Traffic Office Manager* is a guidebook for those who wish to alter the quote, invoice and other standard layouts provided with Traffic.

More information becomes available, and all information is easier to collect, including instant work-in-progress reports and quote-versus-running-cost comparisons. Some areas can be password-protected, and the rest can be accessed across the network, so a designer need never approach a manager for a summary of what needs to be done.

For across-the-board automation, however, many are turning to off-the-shelf products such as Traffic Office Manager, JobBag7, Graphic Arts Studio Manager or Agency Pro. With these systems, managers have the opportunity to remake the entire flow of work, from quotation to completion, and even through to invoicing via a built-in accounting module or an export-to-accounts feature.

This is not to say that production managers who use these products put their database-development skills to one side. For example, the customer can usually alter the quote, invoice and other layouts in job-management systems to reflect their company's image and needs. In fact, Robert Young's *Inside Traffic Office Manager* is a guidebook for those who wish to do just that with Traffic. (Interface Publications should have published the $119.95 book by the time you read this, with the ISBN: 0 958 63660 5.)

More substantive changes—those that could reflect the unique way in which work flows through a particular organisation—cannot usually be made by the customer. However, any system based on Omnis or FileMaker is amenable to change, and the publishers of job-management software usually have a standard schedule of fees for doing so on behalf of a customer.

— Steven Noble

AGENCY PRO

Publisher: Designware
URL: <www.designware.com.au>
Distributor: Interface Australia
Telephone: 1800 689 689
Facsimile: 02 9436 2599
Prices
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Additional users: $250–$50

GRAPHIC ARTS STUDIO MANAGER

Publisher: Price Wizard Software
URL: <pricesys@localnet.com.au>
Distributor: Price Wizard Software
Telephone: 02 9904 9811
Facsimile: 02 9904 9951
Prices
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Graphic Arts, 2–5 users: $1295
Graphic Arts, 6–50 users: $2295
Pre Press, single user: $995
Pre Press, 2–5 users: $1995
Pre Press, 6–50: $2995

JOBBAG7

Publisher: DB Developments
URL: <www.dbdev.com.au>
Distributor: DB Developments
Telephone: 02 9954 4687
Facsimile: 02 9954 5381
Prices
JobBag7 Studio, up to five users: $2550
JobBag7 Studio, additional users: $350–550 each
JobBag7 Enterprise, single user: $5650
JobBag7 Enterprise, additional users: $350–550

TRAFFIC OFFICE MANAGER 2.1

Publisher: Cormoran Communication
URL: <www.cormoran.com.au>
Distributor: Cormoran Communication
Telephone: 03 5222 6999
Facsimile: 03 5222 2695
Prices
Agency Manager for Mac OS: $2395
Agency Manager, cross platform: $3495
Studio Manager for Mac OS: $1995 *PowerShift:* $195
Studio Manager, cross platform: $2995

Agency Pro can generate a wealth of reports ranging from 'report by deadline', to individuals' task sheets. The 'work in progress' field automatically generates a series of tasks for a job based on the information entered into the estimate. They can either be ticked off, or allocated to specific staff members complete with additional notes.

All information relating to a job is linked, including correspondence (letters, faxes, emails, internal memos), briefs, costings and quotes (see figure seven). Extensive contact management includes comprehensive databases but also the ability to compose emails in Agency Pro then send them to an email program's outbox. Users can link directly to their clients' email and web addresses. The program's mail-merge function can be used for all document types, including faxes and emails.

There is no 'request for quotation' module in the current version of Agency Pro, nor are there any standard templates for purchase orders.

Launched in November 1998, Agency Pro comes with 20 hours of free customisation and consulting as well as 1300 phone assistance and a Timbuktu-via-IP help desk. It has been designed to fully integrate with MYOB (specific time codes are imported into the accounting package), using AppleScript if desired.

Ready, set, go

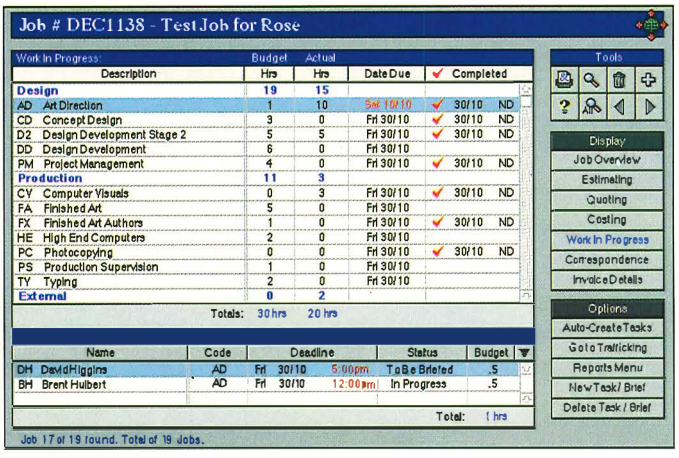
In the end, each of these packages promises to lift your bottom line and show you where unaccounted costs are slipping through the cracks, but to do this effectively you probably need to commit to more accurate and extensive record keeping—particularly with regard to time sheets and internal costs. This may take some getting used to.

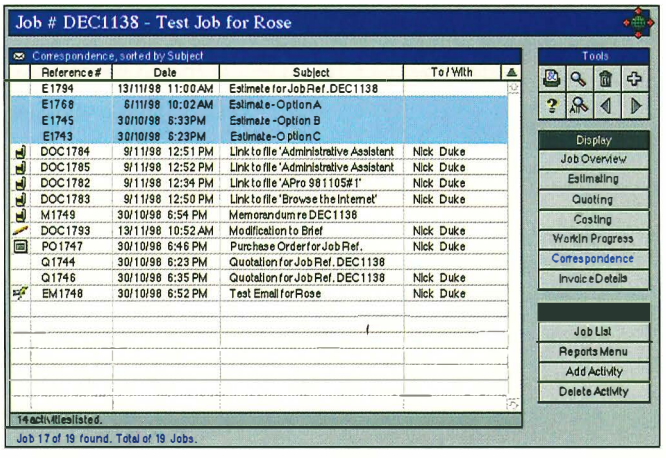
All these job-management systems are so complex and comprehensive that this overview can merely sample their features. When it comes to choosing one of the four, start by sampling them all. Once you are using demos in your studio with introductory tuition, you could be surprised by the opportunities they provide for transforming your business.

After being projects coordinator for a busy design bureau, Rose Michael is now a freelance writer with no job-management software, no job management, and very little idea of who owes her what, or when.

Figure six (below left): The aim of Agency Pro is to monitor the real cost of a job as work progresses—rather than to supply a comparison after the event—so there's no possibility of any unforseen blowouts.

Figure seven (below right): All information relating to a specific job is linked in Agency Pro, including correspondence (letters, faxes, emails, internal memos), briefs, costings and quotes.





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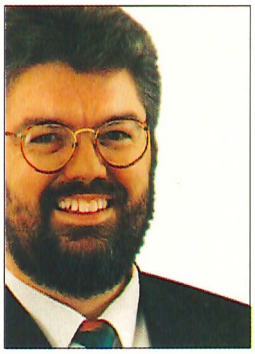


By David Whitbread

Work well with limited resources

It's a new school year and most Australian associations and organisations are getting their houses into order: old committees are handing the reins to new committees, lists of fundraising targets and calendars of activities are being prepared, and you—the person with a computer at home and some experience with preparing brochures at work—have possibly just landed the communication tasks.

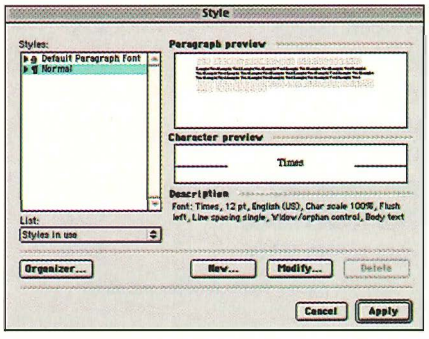
Along with all the usual newsletters and fliers, there might be a few print-based fundraisers—such as recipe books, short story and poetry collections, how-to booklets, silver circle booklets, dinner menus and concert programs—to prepare. Usually, these projects have one thing in common: the resources allocated to them are not quite enough, because these organisations are working hard to maximise their meagre resources.

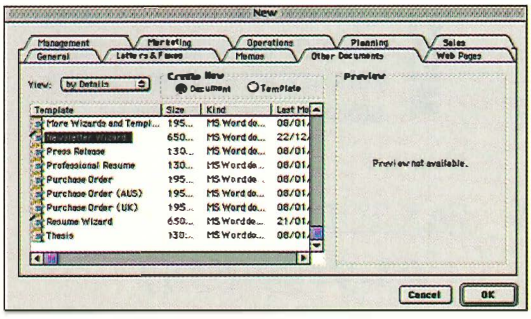
Every aspect of printing affects the bottom line. So, you look at digital printing as an alternative to offset or letterpress printing. You look at silk screen printing and photocopying as an alternative to digital printing. You look at alternative binding styles, alternative laminating and varnishing options, and cheaper paper grades.

Because money is in control of production and you are limited by what you can afford, you must maximise the quality of the content instead. If you can handle the design, team up with someone who can write, edit and proofread. Then decide how much time you each can offer in your usually voluntary capacity, because maximising quality takes time. Yours.

Computer

This is where computer-based design jumps in: using your Macintosh effectively saves money and time. With ability and the right tools, you could raise the quality of your organisation's output to at least paraprofessional level, if not professional. Most small organisations cannot make excuses for their production quality anymore, because they or their members have the tools.





Microsoft Word 98, like most contemporary word processing or office productivity programs, includes templates and shortcuts, for creating common document types (bottom); and style features, for recording and more easily reusing common appearance attributes (top).

It doesn't much matter what program you're using as long as you are confident and know the toolbars and rulers. Publishing programs are usually more flexible than word processors, but some of the latter come with good templates for this sort of work.

Check your program first for its options and flexibility. Before the demands of the year get too large, set up some basic templates. If you're lucky, you might be able to build on some of the work of last year's committee.

Spend some time creating templates that can handle different text styles, such as prose, poetry and events calendars; your organisation's logo; and pictorial material, such as scanned photographs and clip art.

Create a few different heading styles and paragraph styles that can be used across a range of materials. Using the same elements across an array of different documents will also give them a corporate look.

Photocopier

The photocopier comes into its own because it is so flexible and still one of your cheapest options. If your budget can stretch to a colour toner cartridge, you can use the photocopier for inexpensive two-colour printing.

Practice with the photocopier so you don't waste sheets when you're duplexing (printing on both sides of each sheet of paper). Know how to clear paper jams and replace the toner cartridge.

The photocopier could enlarge graphics better and more quickly than a scanner, too.

You also might produce enlarged material and reduce the final output on the photocopier as you print. This usually improves the quality of 300dpi output. Just remember that your template will need to take the reduction into account. As an example, if you are reducing an A4 sheet to A5, and you want the text type to end up being about 10 points, create the A4 master page with 14-point text.

Paper

Try to always minimise your use of paper. This not only helps the environment, but also maximises your spend as paper can be one of the most significant costs.

Simply trying to ensure everything is produced double-sided can reduce your paper consumption. How many school newsletters, minutes of association meetings and fliers are single sided? Do a paper audit and purge. Know how to produce material for the following formats (and prepare templates for each): one-third A4 pamphlet; A5 booklet or newsletter; A4 newsletter folded down from A3 (looks more impressive folded than just a set of A4 sheets side stapled).

At the beginning of the year, seek out suppliers who will give your organisation a discount or who have offcuts or old stock that they might donate. This would enable you to spend part of your budget elsewhere.

Also buy up a few different colours for cover sheets and maybe even preprinted sheets for special uses. It is handy to have a selection available for fast production, but you don't want too great a stock pile.

David Whitbread is a publications designer and lectures in graphic design at the University of Canberra. His email address is <duw@design.canberra.edu.au>.

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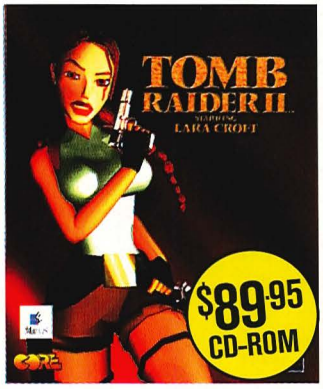

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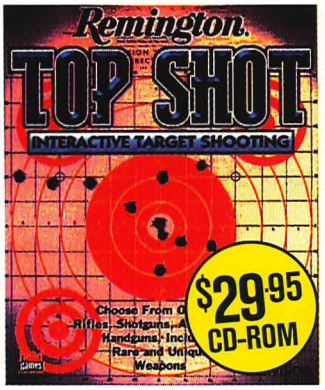

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illustration's golden age

Three outstanding drawing programs put power in the hands of Mac artists. By Deke McClelland.

As computer artists, it seems like we're forever on a treadmill—once you become comfortable with one version of a program, another hits the streets. These days, the average time between upgrades is about 15 months. In this climate, if a company has the gall to issue an upgrade—and expect us to buy it—that upgrade had better be good.

That's why the newest update frenzy is so impressive. Adobe Illustrator 8.0 returns to its glory days as a streamlined, feature-rich standard-bearer. CorelDRAW 8.0.1 performs an even more amazing trick, rising like a phoenix from the smoking husk of the roundly dismissed version 6. A third upgrade, Macromedia FreeHand 8.0.1, is the most modest, but its predecessor, FreeHand 7, was so far ahead of the pack that the new version still comes out smelling like a rose.

The secret behind the success of the version 8.x upgrades is imitation. Each of these drawing programs offers exciting new features that were either borrowed from competitors or inspired by different graphics programs. The result is a trio of drawing doppelgangers—each has its special strengths, but if all you care about is having a lot of great features, then they all fit the bill.

That's why we dug a little deeper to examine not only whether these programs have particular features but also—if so—how well those features perform and how easy they are to use.

To do this, we graded key features, hired three artists to test drive the new applications, and compiled lists of the top five tasks that each program performs better than the rest. The result is a comprehensive picture of three closely matched rivals and a clear ruling on the one program that gets it right most often.

Interface and compatibility

Every graphics program is like a room in a big studio. If you're comfortable working in the environment that the software provides, you can accomplish anything. If not, your creativity will be stymied. Likewise, you need to be able to move freely throughout the studio—from your drawing program to Adobe Photoshop, for example. If you can exchange files easily, as well as open old files and integrate them into new artwork, you'll save time.

New order. Say what you will about Adobe's efforts to make all its applications' interfaces consistent—in return for the sometimes confusing changes Illustrator has undergone, the program now has the most straightforward working environment in the business.

Illustrator 8.0 frees up screen space by aligning palettes in an orderly column along the window's right side. It colourises selection outlines by layer, so you always know where you are.

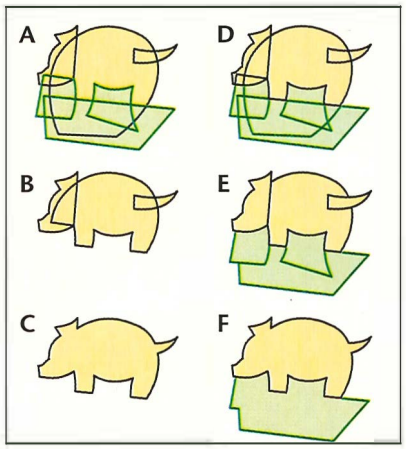
It provides on-screen hints telling you which key to press to get any tool. It also hides interface elements at the touch of the tab key, leaving just you and the illustration, artist to artwork.

Illustrator also now opens FreeHand and CorelDRAW files, so your artistic experience isn't interrupted by technical difficulties. As always, Illustrator also opens and saves native and EPS files that have been saved in any previous version of the program—a claim to backward compatibility that neither FreeHand nor CorelDRAW can make.

Customisable disorder. When compared with Illustrator 8.0's orderly atmosphere, FreeHand 8.0.1's interface is best described as unkempt. Unless you have a second monitor, mismatched palettes either overlap or obscure your view of the illustration window. Granted, you can collapse the palettes you aren't using, but it's far easier to pile them up in a heap.

FreeHand is not without its advantages over Illustrator—which include smoother scrolling, faster screen redraws, and more opportunities for

ILLUSTRATION: JEFFREY PELO



Illustrator 8.0 offers more ways to combine paths than any other program. For example, starting with some simple shapes (A), you can make a pig by subtracting the green ones (B) and then uniting the yellow ones (C). Alternatively, you can divide (D), trim (E), or merge (F) the original shapes to achieve other effects.

customising the interface. However, there's no full-screen drawing mode; no graphic navigator; and no helpful hints built into the default tool shortcuts, which include such oddities as pressing F10 for the scale tool (you can choose to use built-in Illustrator or CorelDRAW shortcuts, though).

FreeHand does a great job of opening Illustrator artwork but has problems with FreeHand 2 files and can't even see FreeHand 1 files. As a result, you may have a drawer full of floppies with FreeHand files that this version can't open.

Strange ways. CorelDRAW 8.0.1 presents a more streamlined front than FreeHand 8.0.1, with regularly sized palettes and a context-sensitive Properties bar that changes to suit the selected object. It also offers the most extreme zoom range, from one percent to several thousand times normal size, for when you need to be really precise.

Adobe's hand / five tasks Illustrator does best

Artist John Ritter usually sticks to pens, paint, and Adobe Photoshop. After experimenting with Illustrator 8.0 to make this drawing, however, he was pleasantly surprised. "It took me awhile to get the hang of it," he said, "but once I did, I was amazed by all I could do." Ritter was particularly impressed by Illustrator 8's new Gradient Mesh tool, which let him blend multiple colours in different directions within the same object. He used it to quickly create complex shading that would normally require a trip to Photoshop, such as those in the rider's helmet and arms.

1 Combine paths. No program lets you make complex paths out of simple ones like Illustrator. FreeHand and CorelDRAW let you unite paths, find the intersection, and punch out holes. But only Illustrator lets you exclude intersections, merge all similarly filled paths, crop, trap and more.

2 Create brushstrokes. Illustrator 8 lets you attach any collection of objects to a curve. The result is undulating artwork, wavy type and traditional-looking brushstrokes. The effects are live—just edit the path and the brushstroke changes with it.

3 Mask objects. Unlike FreeHand, Illustrator lets you mask objects with editable text. Unlike CorelDRAW, it lets you edit the contents of a mask without hiding everything else on the page. It offers the best of both worlds.

4 Draw geometric shapes. Illustrator is known for its free-form curves, but even more impressive are its geometric shapes. While you draw, you can change the number of sides on a polygon, increase the pointiness of a star, and move an ellipse to get it exactly in place.

5 Trade artwork with Photoshop. Drag and drop clipping paths between the two programs, calibrate the programs (using shared ColorSync profiles), and export Illustrator artwork to the Photoshop format with all layers intact.

If you've spent any time in Illustrator or FreeHand, however, using CorelDRAW feels like a trip to a foreign country. I've been using CorelDRAW since version 1, yet I still shudder at anchor points called 'nodes', masking called 'power clipping', and the common arrow unpleasantly labelled the Pick tool.

There are also inconvenient aspects to the interface. There's no shortcut for the hand (or Pan) tool, although you can scroll by pressing the option key while using the arrow keys. You can hide all interface elements by pressing F9, but you can't do anything with your artwork until you press the escape key to bring back the clutter. CorelDRAW 8's interface is original, but there's work to be done before it will bridge the gap with Mac professionals.

• *Interface/compatibility champ: Illustrator 8.0*

Drawing and editing

Once the exclusive domain of Illustrator, drawing and editing is now handled competently by all three applications. This is a good thing, since drawing is the central capability of a drawing program.

All three programs let you draw and edit complex paths, automatically trace scanned line art, and establish custom guidelines that apply order to even the most sophisticated illustrations. That said, each program has strengths that suit specific kinds of artists.

Precise power. Despite its competitors' improvements, Illustrator still dominates in a few areas. Its geometric-shape tools can't be beat, letting you draw, move and edit shapes on the fly so that you get them right the first time. The pen tool is now smarter, permitting you to add and subtract points without switching tools or pressing keys. Illustrator 8's numerous path operations are conveniently collected in a single palette. Timesaving smart guides ensure that your straight lines are absolutely straight and in line with every other path in your drawing.

The one continuing failure of Illustrator 8 in this category is the program's Stone Age autotrace tool, which traces only one path at a time, and does so badly. If tracing is important to you, purchase a dedicated program such as the Adobe's $295 Streamline. Better yet, get FreeHand instead.

Efficient flexibility. Despite Illustrator's popularity among working artists, FreeHand is every bit as good at drawing and editing and includes some true time-savers to boot. For example, where Illustrator makes you trace one path at a time and CorelDRAW makes you launch a separate program (CorelTrace) if you're doing complex tracing, FreeHand alone can automatically draw hundreds of paths anytime you draw a marquee around a bitmapped image with the tracing tool.

FreeHand likewise expedites the selection of objects, so you can quickly access any shape you want to edit and even replace all occurrences of it globally. I'm not a fan of how FreeHand makes you regularly press tab to deselect objects before making a new selection, but the ability to select down a stack of overlapping objects by control-clicking still beats what you can do in Illustrator.

FreeHand also offers a welcome break to artists who simply want to draw. If you're tired of editing paths by pulling on little control handles, FreeHand's Freeform tool will offer some relief—it lets you mould outlines by brushing up against them.

Schematic standout. CorelDRAW's drawing features take some getting used to, but ultimately they make sense. For example, to edit points, you use a dedicated reshape tool or click on buttons on the Properties bar. Illustrator and FreeHand provide more-dynamic controls, but the advantage of CorelDRAW's approach is that it's easy for novices to learn.

Where the program really distinguishes itself is in schematic drawing. It lets you specify a scale of measurement—say, 1cm equals 1m—essential when drawing plans or schematics. You can then use the Dimension tool to automatically label the length of line segments according to your scale. This feature—inexplicably missing from both Illustrator and FreeHand—makes CorelDRAW an appealing option for artists who do a lot of technical or architectural illustrations.

• *Drawing/editing champ: three-way tie*

Transformations, masks and blends

When you're creating professional-level artwork, it's not enough to just push around your polygons. The next stage of creating and editing your artwork involves using three very practical effects—transformations, masks and blends.

Simple convenience. The most commonly used transformation is scaling. Illustrator 8 lets you increase or decrease an object's size by simply dragging a corner handle. However, this may hamper your ability to snap objects into alignment—for example, when attempting to align the corner of one shape to another—so if you don't like the feature, turn it off.

Illustrator's Transformation palette is unequalled for convenience. It puts scale, rotate and skew options with a centre-point control in a single location. The program lets you apply editable type as a mask as well as blend between any two shapes filled with any number of colours. Finally, you can also edit blends dynamically.

The bad news is that you can repeat just one transformation at a time, which means you can't rotate and scale in one duplication when you want to create, say, a pattern of objects spiralling toward the viewer. If you managed to put up with Illustrator back before live blends, however, this is probably small potatoes.

Uneven abilities. FreeHand loses points in this category for its lack of distortion capabilities, its poor enveloping feature, and its inability to blend between two gradations unless they contain exactly the same number of colours.

On the other hand, FreeHand's mask-editing functions are every bit as good as Illustrator's, and FreeHand lets you repeat a long series of transformations to quickly create swirling tailspin patterns that simply aren't possible with blends. FreeHand's transformation effects also have some efficient touches. For example, you can double-click on an object to quickly toggle between scale and rotate modes.

Erratic rewards. You can do the same in CorelDRAW, but the program suffers from disorienting inconsistencies. For example, to scale height and width disproportionally in one operation, you must press the shift key while dragging. But if you use the dedicated Free Transform tool, things suddenly change—disproportional scaling is the rule, and you press the command key to scale proportionally. CorelDRAW doesn't do things the way they've been done for years on the Mac, and in the process, the program ensures that many artists will be frustrated.

The saving grace is that CorelDRAW excels when it comes to distortions. You can tug and bend outlines in ways simply not possible in Illustrator and FreeHand. If you're willing to put in the time to learn the Corel Way, there are rewards.

• *Transformations/masks/blends champ: Illustrator 8.0*

Macromedia's hand / five tasks FreeHand does best

Adobe Illustrator is Ron Chan's "everyday tool", so we asked him to take FreeHand 8.0.1 for a spin. He was surprised how difficult it was to make the transition, but as he created this drawing he did find some features he thought were keepers. To make sure his colours look just right, Chan previews his drawings in Photoshop. Usually, fixing colours that have shifted is a pain, but FreeHand's powerful find and replace tool gave him a new way to do so quickly and thoroughly—he could select a colour and change it everywhere (even in the gradients) within seconds.

1 Trace scanned images. Kudos to CorelDRAW for bundling the stand-alone CorelTrace, but FreeHand's integrated tracing tool is more reliable and easier to use. It traces multiple paths at a time, fills them with up to 256 colours, and offers expert edge control. No tool measures up to hand tracing, but this one comes the closest.

2 Create tables. FreeHand still creams the competition in the text department, and its tabs and tables are the crème de la crème. Besides supplying the widest array of tab-stop options, FreeHand lets you divide a text block into editable rows and columns for spreadsheet-like control.

3 Repeat a series of transformations. Clone a path, rotate it, scale it, rotate it again, and transform it in a hundred different ways. Repeat the whole shebang by pressing command-D. Unlike CorelDRAW, FreeHand doesn't make you clone and transform according to a prescribed ritual. If you just work naturally, FreeHand keeps up.

4 Search and replace objects. FreeHand is the king of the graphic search, select and replace. Search according to font, colour, stroke weight, and even path shape. This has handy applications—look for speedy draft-quality blends that have 10 steps or fewer, and then replace them with the slow-drawing, smooth-printing, 100-step variety.

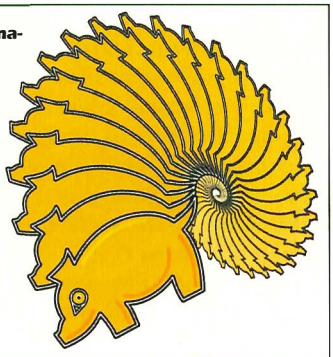
5 Create animated web graphics. Illustrator is the better all-around web-graphics app, but only FreeHand lets you create web animations. Blend a series of objects, expand the blend to layers, and export the layers as frames in Macromedia's Flash format.

Formatting and manipulating text

The logos and designer type treatments we see around us in magazines and posters all started out in drawing programs. Programs like Illustrator, FreeHand and CorelDRAW are unique in the software world for permitting you to fit text to a curve, stroke character outlines, and convert letters to editable paths. For many designers, these are the very reasons they own a drawing program at all.

Modest but solid. Illustrator lags behind FreeHand for type-handling abilities mostly because it lacks style sheets, it doesn't let you change the slant of type on a curve, and it offers only rudimentary support for multipage documents.

What Illustrator does, however, it does right. Instead of offering style options such as bold and italic, which have no bearing on the many typeface families that include stylistic variations such as black, condensed, semibold and a wealth of others, the Character palette presents you with two pop-up menus: one for the font and the other for the true designer-defined styles. You can even create custom variations on Multiple Master fonts, just the thing if you need picture-perfect copyfitting.



Repeating transformations has long been one of FreeHand's strengths. After rotating, scaling and skewing a clone of a small pig outline in FreeHand 8.0.1, I simply pressed command-D to repeat the transformations, resulting in a spiral of pigs.

Illustrator is also the only Macintosh program I've seen that lets you access the prebuilt fractions included with most PostScript typefaces. And like FreeHand, Illustrator lets you modify most formatting attributes, such as kerning and leading, directly from keyboard shortcuts—a helpful time-saver.

Unmatched excellence. Be that as it may, FreeHand still dominates this category as it has since FreeHand 1 first beat Illustrator to market with a feature that let you put type on a curve. FreeHand's style sheets rival those in PageMaker and XPress and are much easier to use. Just option-click on a style name and you can edit every attribute, from typeface to paragraph spacing, all in a single dialogue box. Unlike Illustrator, FreeHand also lets you link a standard text block to type on a curve—great for free-form layouts.

If you ever need to create a list or catalogue, FreeHand is also clearly your buddy. It's the only drawing program that accommodates multiple lines of type between tab stops. FreeHand also supports multipage documents—even with varied page sizes and orientations—an essential feature for those who use their drawing program to design brochures or complex packaging.

Glitz without guts. When it comes to type-handling features, CorelDRAW delivers the glitz—all its special effects, from masking to enveloping, are applicable to editable type. Unfortunately, it chokes on the workaday routine.

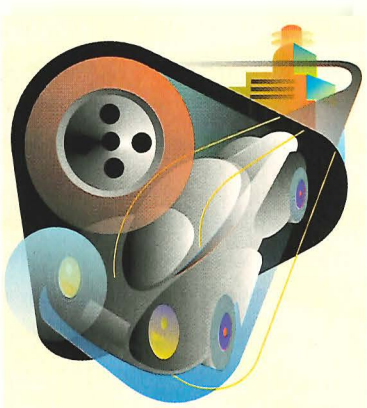
Basic timesaving features are missing from this program. For example, you can't kern from the keyboard. Instead you drag little handles to adjust letterspacing—a terribly imprecise and tedious approach. When you edit text, tab stops conveniently appear in the horizontal ruler, but to simply change the alignment of a tab stop, you have to visit a dialogue box, switch panels, hunt down the tab stop in a list, and choose a different alignment option. Strangest of all, there's no command or shortcut for selecting all the words in a text block, a simple matter of command-A in FreeHand and Illustrator.

• *Text champ: FreeHand 8.0.1*

Fill, stroke and colour

You'd think assigning colour would be an open-and-shut matter in a drawing program—after all, it's just a question of filling the interior of sha-

Corel's hand / five tasks CorelDRAW does best



Artist Hank Osuna loves shapes. So much so that before PostScript drawing programs existed he cut templates out of Mylar and then traced the edges with a pen to make his curves really smooth. When we asked Osuna to put CorelDRAW 8.0.1 through its paces, he found himself somewhat confused by its interface but impressed by the way it made experimenting with shapes easy. He used the Interactive 3D tool to quickly create the buildings in the background of this illustration by drawing squares and extruding them. He appreciated being able to rotate, extrude and experiment with light without taking time to create the illusion of 3D space himself or having to work in another program.

1 Blend paths. Only CorelDRAW lets you adjust the acceleration of a blend with separate control over the pace of intermediate steps and colours. Also unique: you can convert any step in the blend to an independent anchor path, which means that you can change the shape of a blend in its centre.

2 Distort type and graphics. CorelDRAW's Interactive Envelope tool lets you stretch a complex group of paths in eight directions at once, and it's even applicable to fully editable text. FreeHand's Envelope Xtra isn't in the same league.

3 Create translucent objects. CorelDRAW 5 for Windows introduced dynamic lens effects years before FreeHand did, and Corel has been improving them ever since. Add and subtract colour values, colourise and magnify with a fish-eye lens. But even that pales in comparison to the Interactive Transparency tool, which fades and blends objects with any background.

4 Draw plans and diagrams. CorelDRAW lets you specify a scale of measure and automatically labels the height and width of objects, essential for creating schematics and architectural plans.

5 Explore 3D effects. Can Illustrator extrude type and graphics into 3D space? Can FreeHand bevel the edges of editable letters and apply realistic lighting? No, but CorelDRAW can. The redraw is as slow as molasses, but that's the price you pay for true 3D.

and stroking the outlines. But there are still lots of variations among the Big Three. Name any fill, stroke or colour feature, and you'll find one program that's out of step.

Take arrowheads, for example. CorelDRAW conveniently lets you convert any shape into an arrow and fit it to a stroked path. FreeHand provides an editor that lets you build and catalogue arrows on the fly—also nice. All Illustrator can muster is a lame plug-in that serves up a handful of Zapf Dingbats characters.

Illustrator isn't the only offender. FreeHand's fill and stroke options are strewn among five different palettes, and its eyedropper tool lacks a keyboard shortcut. CorelDRAW refuses to show you Pantone numbers unless you visit a dialogue box that just so happens to let you apply only one colour at a time.

Different strokes. Lest you grow sour and disillusioned, we should inform you that each application is innovating in new directions. Illustrator's hot new feature is the Brushes palette. After saving a series of paths as a brush, you can use the brush to create traditional-looking paint strokes or twisting images. Edit any of the paths that make up the brush, and Illustrator automatically updates the brush to fit. This approach is simple, dynamic, and very effective—a boon to artists trying to give their drawings a different look.

Power with pizzazz. To expedite the editing of your art, FreeHand lets you search and replace according to fill, stroke and other attributes. Not only is FreeHand's Search And Replace palette set up more conveniently than CorelDRAW's equivalent wizard, but the FreeHand palette also lets you sample colours from an illustration—the only sure way to get the search criteria right. FreeHand 8 also adds a new feature—lens effects. The most useful aspect of this is that you can fill a shape with translucent colour. You can likewise magnify an area and centre the effect anywhere in your artwork, just the ticket if you want to draw, say, an offset refraction in a pair of glasses.

Flashy effects. CorelDRAW is no slacker in the competition for flashy fill and stroke effects. Its lens effects were, after all, the inspiration for FreeHand's. While CorelDRAW lacks FreeHand's automatic updates—you're forever having to click on the Edit and Apply buttons to see the result of your changes—its effects are more numerous, including a fish-eye magnifier. If you're smart, however, you'll ditch CorelDRAW's Lens palette and focus on the program's Interactive Transparency tool. This is one of CorelDRAW's most compelling features—it lets you use linear and radial gradients to fade an object into nothingness. You can even apply Photoshop-like blend modes such as Multiply, exactly what you need to create a coloured cast shadow.

• *Fill/stroke/colour champ: three-way tie*

Web graphics

Drawing programs were never designed with internet output in mind, but it's just too trendy a topic for them (or us) to resist. The category is so new that there's very little overlap in features.

Bang-up basics. Illustrator's web features deliver practical support to artists exporting work for the web. You can open the web-safe colour palette in an independent window without closing other colours. The program's image-map support is excellent—after you assign URLs from the handy Attributes palette, Illustrator even generates the client-side HTML.

There's also easy access to essential GIF and JPEG export options (although unlike in FreeHand, you're on your own to manually append vital extensions such as '.gif'). The program does the best job of exporting PDF pages. Finally, if you care to finesse your artwork in Photoshop—which you probably will—only Illustrator lets you export complex artwork with every layer intact. If you're

On the drawing board / Canvas 6

For those shopping for a drawing program, FreeHand, Illustrator, and CorelDRAW aren't the only options. By the time you read this, PICA Software (03 9388 9588, fax 03 9388 9788) will have shipped Deneba's $799 Canvas 6, which is certain to offer high-quality drawing tools and features.

Canvas 6's spiffy new look includes a streamlined interface with a customisable tool bar and a docking bar.

Comparing the packages in this shoot-out directly to Canvas is like comparing apples to, well, the whole basket of fruit. Canvas isn't just a drawing program; it is an image-editing, page-layout, web design, and presentation program, too.

Innovative effects. Canvas 6 wasn't shipping at press time, but we took a peek at a late-beta version. We found that the program's best features spring directly from Canvas's signature strength—the marriage of bitmap and vector technology.

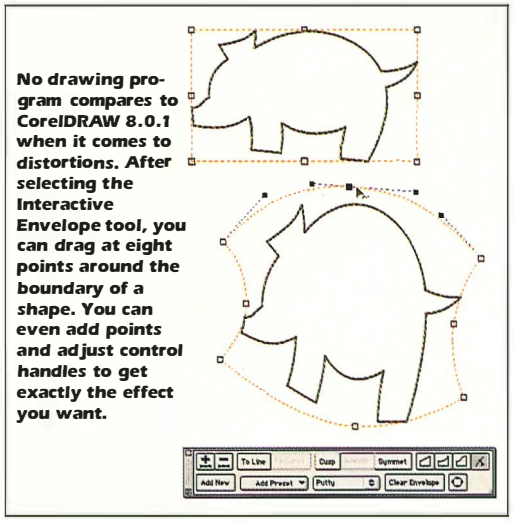
Deneba's SpriteLayers technology lets you create some interesting transparency effects that would be difficult—if not impossible—to make in a dedicated drawing program. The effects can be applied to anything—bitmapped images, vector-based drawings and text. For example, you can create a vignette in which your artwork becomes gradually more transparent near the edges. Apply a vector-transparency gradient mask (or a custom mask) to experiment with the size and positioning of the vignetted area. You can also place the transparent area in the interior of a graphic to create cut-away views. The elements always remain editable even after you've applied the effect.

A tidy new look. We were also impressed by Canvas's new face-lift, which helps your workspace stay better organised and perform more efficiently. Stash floating palettes in Canvas's new docking bar—a thin horizontal strip, just above the drawing area, that displays only the tabs of each palette. Click on a tab to make a palette unfurl. You can rearrange the tabs along the bar at will. Also new is a customisable tool bar.

Canvas 6 also addresses a gripe users had with earlier versions, namely that the drawing tools weren't robust enough. New tools include a knife for slicing vector objects, as well as others for drawing arcs and ellipses by defining three key points. Other complaints centred on Canvas's limited set of supported file formats—this also appears to be remedied.

A promising future. We'll have to wait for the shipping product to see just how Canvas 6 rates. But it's already clear that in the competition of the graphics titans, Canvas 6 is fighting with a unique set of weapons.

—Shelley Cryan



No drawing program compares to CorelDRAW 8.0.1 when it comes to distortions. After selecting the Interactive Envelope tool, you can drag at eight points around the boundary of a shape. You can even add points and adjust control handles to get exactly the effect you want.

primarily interested in creating basic web graphics as efficiently as possible, Illustrator delivers.

Animation innovator. On the other hand, FreeHand's approach to web graphics focuses on animation, primarily in the form of Shockwave Flash output (Macromedia's proprietary standard for vector graphics on the web). FreeHand makes animation easy. After blending among a few paths, for example, you can automatically assign each step in the blend to a layer and then export the layers as frames in a Flash animation. You can also export the pages in a FreeHand document as frames. If you have Macromedia's Design in Motion Suite, you can also use Insta.HTML to export artwork as dynamic HTML (DHTML).

FreeHand's more basic web-graphics features, however, don't shine as much as Illustrator's. FreeHand makes you import web-safe colours into the Colors palette, where they can become confused with unsafe colours. The program cannot save Photoshop files with layers intact.

If you want to create web animations, FreeHand can't be beat. Otherwise Illustrator's more modest but well-implemented web features are your best bet.

Limited control. CorelDRAW comes at web graphics from a completely different angle—in addition to creating dynamic drop shadows and 3D extrusions (handy for making all those navigation buttons), CorelDRAW lets you assign URLs to objects and then output them as full-blown web pages.

Many of these features are tricky to use. Although you can export full-blown web pages, you have little control over the output of individual images. There's limited GIF colour-palette control. File-size estimates are often inaccurate. CorelDRAW offers no PDF support and cannot save images as layered Photoshop or Photo-Paint files.

• *Web graphics champ: Illustrator 8.0*

The bottom line

The politics of drawing tend to be pretty darn partisan—Illustrator users regard FreeHand as clumsy and disorganised, FreeHand users see Illustrator as awkward and incapable, and so on.

If that's the way you feel, then buy the drawing program that appeals to your politics and how you work. For once, you can't go wrong—Illustrator 8.0 and FreeHand 8.0.1 are both excellent, so who cares how the competition shapes up? And while Corel doesn't have much of a following on the Mac, CorelDRAW 8.0.1 may earn one.

For those who are apolitical or new to the drawing scene, however, we recommend Illustrator. It wins or ties in five of our categories and performs well in the sixth. FreeHand is a better choice for artists who create multipage, text-rich work or web animations.

But for the general artist, Illustrator is a solid overall program with more new features than loyal Illustrator users have seen in years.

The fact is, the competition has never been closer. I'm happy to say that we've most certainly entered drawing's golden age.

Deke McClelland has written guides for all three illustration programs under review—Real World Illustrator 8 *(Peachpit Press, 1998) and* FreeHand 8 Bible *and* CorelDRAW 8 for Dummies *(both IDG Books Worldwide, 1998).*

Illustrious implementations / three apps rated

The editor's choice is Adobe Illustrator 8.0. This program's streamlined interface and excellent feature set make it the strongest overall drawing choice. These are reviews you can trust, as we rate only final shipping products, not prototypes. What we review is what you can actually buy.

PRODUCT	Illustrator 8.0	FreeHand 8.0.1	CorelDRAW 8.0.1
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AVAILABILITY	$895 ($249 upgrade), distributed by Adobe: 02 9418 8488, fax 02 9418 8489 and <www.pacific.adobe.com> EDITOR'S CHOICE	$679 ($249 upgrade) or $889 ($459 upgrade) for Design in Motion Suite, distributed by Firmware Design (02 4721 7211) and Scholastic New Media (02 4328 3555).	$1099 ($399 upgrade), distributed by Corel: 02 9959 1902, fax 02 9959 1005 and <www.corel.com.au>
RATING	4½	4	3½
BUNDLED SOFTWARE	Adobe Acrobat Reader	Design in Motion Suite includes Flash 3, Insta.HTML 2	Canto Cumulus Desktop 4, Corel Photo-Paint 8, Corel Trace 8, Font Reserve 1.02
Interface and compatibility champ	•		
Drawing and editing champ	•	•	•
Transformations, masks, and blends champ	•		
Formatting and manipulating text champ		•	
Fill, stroke, and colour champ	•	•	•
Web graphics champ	•		

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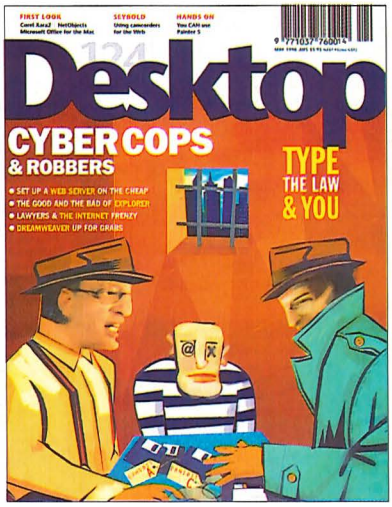

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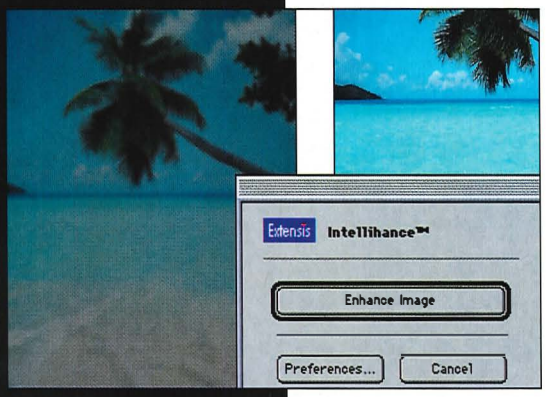

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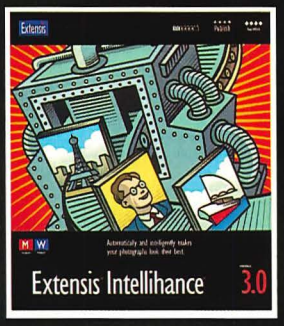

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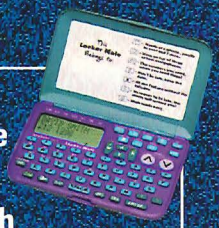

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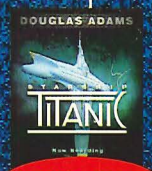

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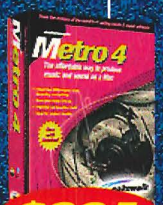

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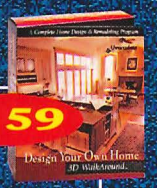

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Vendor:	Agfa	Casio	Fuji	Kodak	Ricoh
Distributor:	Agfa	Shriro	Hanimex	Kodak	Ricoh
Telephone:	03 9264 7711	02 9370 9100	02 9466 2900	03 9350 1222	03 9888 7722
Facsimile:	03 9264 7890	02 9417 6455	02 9938 1975	03 9353 2940	03 9888 7744
Reviewer:	Deke McClelland				

RATING KEY

Outstanding	5
Very Good	4
Good	3
Flawed	2
Unacceptable	1
Dangerous	bomb

Our reviewers evaluate, rigorously test and give detailed assessments of new-release software and hardware. For brief reviews, turn to page 21.

Megapixel cameras

FIVE NEW CAMERAS CAPTURE 1.3 MILLION PIXELS OR MORE

Competition in the digital-camera market is heating to a boil. While companies such as Kodak, Nikon and Olympus focus on quality and innovation, others are more interested in simply meeting a demand.

This may explain why Ricoh and Casio—hardly big names in camera circles—are selling megapixel cameras for $1500 or less. But for such prices, you shouldn't expect impeccable image quality.

Fuji's $1699 MX-700 does capture fine details that hold up well to Adobe Photoshop's Unsharp Mask, but the colours often appear faded, with a yellow cast.

The softer images from Ricoh's RDC-4200 tend to drift toward blue, with exaggerated contrast between light and dark. The Ricoh camera also has problems with blown highlights, so that sunny skies almost always turn white.

The worst photos come from the Casio QV-5000SX. The blurry focus, gummy edges and severe purple cast of its images challenge the skills of even the most accomplished imaging technicians.

One step up is Agfa's ePhoto 1680. Although the company states that the camera has resolutions of up to 1600 by 1200 pixels—nearly two million in all—this is a function of software interpolation. The 1680's CCD is actually the same size as those in the Casio and Ricoh models, and it likewise captures 1280 by 960 pixels. Fortunately, the detail is just as crisp as with the Fuji model. The colours tend to be a bit understated, but without the yellow cast.

Kodak's DC260, even in diffused or overcast lighting, delivers vivid, accurate colours with rich sculptural details. And unlike the Agfa, it earns its higher price by supplying more pixels than any other camera in the roundup.

Storage and connectivity

Most of these cameras store images on wafer-thin SmartMedia cards. The Fuji model is the most flexible, accepting 3.3*v* and older 5*v* cards; the Agfa and Ricoh accept the 3.3*v* variety only. But whereas the Agfa and Ricoh models ship with 4MB cards, the Fuji includes only a skimpy 2MB card.

Kodak's DC260 uses a removable 8MB CompactFlash card, thicker than the SmartMedia but more resilient as well. The Casio QV-5000SX features 8MB of hardwired memory.

These days, removable storage also translates to faster downloading. If your computer includes a PC

Card reader—as most PowerBooks do—you can purchase a SmartMedia or CompactFlash adaptor for about $200. You remove the card from the camera, stick it in the adaptor, and slide the adaptor into the computer's PC Card slot. Copying 8MB of images takes about 10 seconds; erase the card and you're ready for more.

By contrast, your only option with the Casio is to connect it to your Mac's sluggish serial port and wait about 20 minutes to copy 8MB of images—and that's when the gods are smiling.

More often, Casio's transfer utility has problems finding the camera—this happened every time we tried to download images.

In an about-face, the DC260 is the only camera we've used that cannot shuttle images directly to the Mac, by serial cable or otherwise. Kodak forces you to use a PC Card adaptor, which you must purchase separately.

If you don't have one, your only option is to cable the DC260 to a PC. At press time, Kodak was beta-testing software that permitted iMac owners to download images via a USB cable. The software was available via <www.kodak.com>.

Batteries, zoom and other finery

The Agfa, Kodak and Ricoh models provide continuous 3x optical zooms so you can close in on your subject. (The others offer fake 'digital' zooms, which merely enlarge pixels.) The Kodak DC260 lets you preview the zoom via either an optical or an LCD viewfinder; the ePhoto 1680 and RDC-4200 lack optical viewfinders and force you to use the power-hungry LCD. Thankfully, Agfa bundles rechargeable batteries to feed the LCD and provides an enhanced night view for shooting in low light; Ricoh does neither.

If bells and whistles appeal to you, the DC260 is too sexy for its lens cap. It's the only model in its price range we've seen that permits timed exposures (up to four seconds), time-lapse photography, and user-defined scripts.

The bottom line

Now that Agfa has remedied the software problems that plagued the ePhoto 1280, the 1680's simple controls, above-average image quality, and optical zoom make it an attractive camera.

For imaging professionals, Kodak's DC260 also deserves a long look. Its superb photographs and wide range of controls will satisfy you for years to come. But it suffers from odd flaws. You have to wait several seconds for the DC260 to turn on or off (despite a recent firmware upgrade), and it has difficulty tracking the number of images left to shoot. And in the random-contradictions department, the DC260 is the only camera so far that's compatible with the iMac, making it a high-end device for a low-end market. For those whose main concern in quality—and who have a PowerBook and a PC Card reader—the DC260 is a serious contender, clearly one of the best.

Digital cameras / more pixels for the money

When shooting under cloud cover, the cameras reveal their casts, from slightly yellow (the Fuji model), to distinctly blue (Ricoh), to as purple as an overripe grape (Casio). The Agfa captures fairly accurate but drab colours. Only the Kodak DC260 delivers the scene in all its glory, with obvious colour distinction between building and sky.

MODEL	AGFA EPHOTO 1680	CASIO QV-5000SX	FUJI MX-700	KODAK DC260	RICOH RDC-4200
RRP:	$1999 RRP ($1599 ex-tax)	$1395 RRP ($1126 ex-tax)	$1699 RRP ($1320 ex-tax)	$2622 RRP ($2036 ex-tax)	$1499 RRP ($1195 ex-tax)
CCD resolution (in pixels)	1.3 million	1.3 million	1.5 million	1.6 million	1.3 million
Maximum image size (in pixels)	1280 by 960	1280 by 960	1280 by 1024	1536 by 1024	1280 by 960
Default memory	4MB	8MB	2MB	8MB	4MB
Storage capacity (in images) at maximum image size	6 to 12	16 to 57	2 to 11	14 to 32	6 to 23
Optical-zoom function	yes (3x)	no	no	yes (3x)	yes (3x)
Optical viewfinder	no	yes	yes	yes	no
Rechargeable batteries with charger	yes	no	yes	no	no

Type: Server software
Rating: 4 mice
RRP: $795 (10 clients); $2495 (unlimited clients); $795 (upgrade from 4.x or later)
Manufacturer: Apple Computer
Distributor: Apple Computer Australia
Telephone: 02 9452 8000
Facsimile: 02 9452 8160
Reviewer: JW Davis

AppleShare IP 6

INTRANET SERVER KEEPS GETTING BETTER

Administrators who liked AppleShare IP 5 are going to love AppleShare IP 6. The new version sports major improvements such as Windows support, TCP/IP printing, a revamped mail server, and a host of smaller but welcome refinements. While AppleShare IP still lacks some advanced features found in specialised internet/intranet server products, it proves a well-balanced and useful suite—and good value to boot.

Extended service

AppleShare IP 6 runs on PowerPC Macs equipped with 48MB of RAM and Mac OS 8.1 or later. Like version 5, it lets Mac clients access files over either AppleTalk or TCP/IP—a decided advantage over Windows NT Server 4.0, which offers only AppleTalk access for Mac clients.Even better, TCP/IP significantly boosts performance: testing revealed that AppleShare IP 6 over TCP/IP is more than twice as fast as Windows NT Server 4.0 over AppleTalk.

To fit more seamlessly into mixed networks, AppleShare IP 6 also offers Server Message Block (SMB) file sharing. Windows clients can access the server natively over TCP/IP, eliminating the need for special AppleTalk software, and AppleShare IP servers appear in the Network Neighborhood alongside their Windows NT counterparts. Although this feature isn't perfect—file names are limited to 31 characters, for example—it's still reliable, easy to use, and extremely useful.

AppleShare IP 6 continues to support FTP access to files, using the same security permissions as the standard file server. Other file-sharing improvements include account lockouts due to failed log-in attempts, fixed-term accounts, and the ability to resolve aliases via FTP.

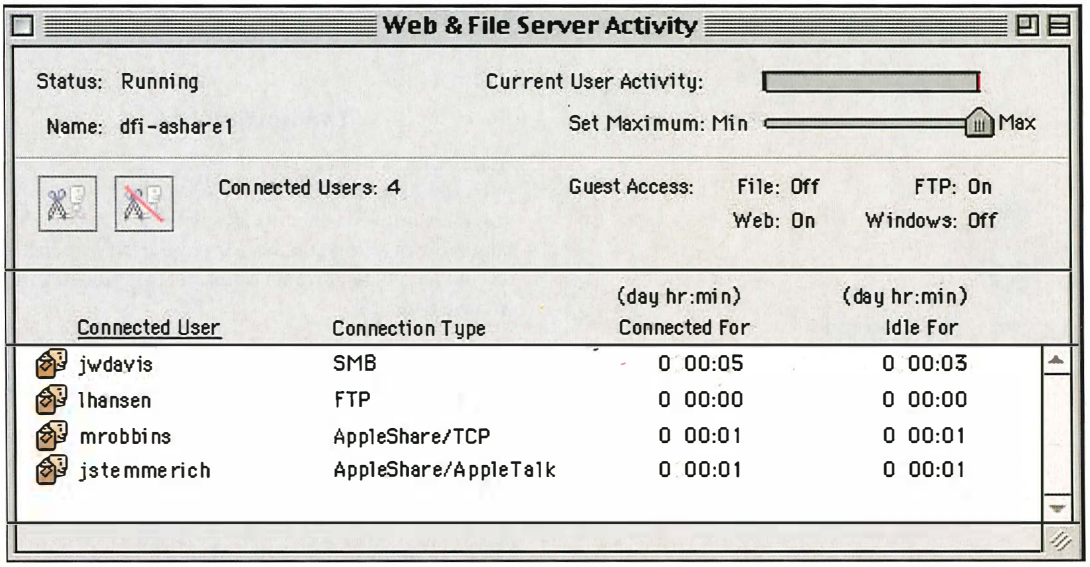
AppleShare IP's web services are fast; simple; and, with the addition of third-party plug-ins, extensible—perfect for typical intranet sites.

Version 6 expands web capabilities by adding support for W*API plug-ins, keep-alive connections, and custom error pages. The web engine also shares the file server's permissions, simplifying basic web security.

But wait, there's more

In addition to expanding AppleShare IP's file and web services, Apple has overhauled the mail-server engine. The mail database stores messages only once, even those with multiple recipients, resulting in improved performance and reduced storage requirements. And the server's new Internet Message Access Protocol (IMAP) capabilities are impressive: users with an IMAP client such as Microsoft's Outlook Express can keep their mail on the server; organise it into folders; and even perform fast, full-text searches that use Apple's V-Twin search technology.

The standard POP and SMTP mail services now include simple antispam tools, multiple domains, and scheduled dial-up internet connections.



AppleShare IP 6 makes it easy to share files via AppleTalk, TCP/IP, FTP and even SMB.

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AppleShare IP 6

The standard POP and SMTP mail services now include simple antispam tools, multiple domains, and scheduled dial-up internet connections.

AppleShare IP's traditionally weak print services have also been improved: version 6 supports both TCP/IP-based printers and printing clients. Administrators can restrict queue access to individual users, but access is granted based on the owner name of the machine you print from. The print server also allows basic manipulation of the print queue, printer pooling, and support for up to 30 printers.

AppleShare IP 6 still has plenty of room for improvement. It lacks advanced file-sharing features, such as a centralised accounts database, log-on scripts, and multiple default FTP directories.

Webmasters will miss Secure Sockets Layer support, virtual hosts and an integrated search engine. And the print server's inability to support native Windows printing and more-advanced print-queue management is disappointing.

Even the installation and administration tools could use work; more-comprehensive setup wizards and a more consolidated administrative console would be welcome.

AppleShare laps NT / scoring the servers

Best result in are red.
Reference systems are in italics.
All scores are in seconds.

50MB file copy

AppleShare IP 6	17
AppleShare IP 5.0.2	19
Windows NT Server 4.0	*41*

Shorter bars are better.

We copied a 50MB file from a client to the test servers over a Fast Ethernet network. For detailed information on our configuration, see <www.macworld.com/tests>. Macworld Lab testing supervised by Kristina DeNike.

The bottom line

AppleShare IP 6 is a good product made better; its support for SMB, IMAP, and W*API make it much more versatile and well suited to cross-platform networks. It falls short of perfection, but AppleShare IP is nonetheless an excellent intranet solution for Mac-oriented environments.

AT A GLANCE

Pros
SMB, IMAP and W*API support; TCP/IP printing, faster than Windows NT Server 4.0.

Cons
No native Windows printing; disjointed administrative tools; no bundled web-server plug-ins.

	SoftWindows 98 5.0.4	Virtual PC 2.1.1 (Windows 98 version)
Type:	Emulator	
Rating:	3½	3½
RRP:	$425	$399
Publisher:	Insignia	Connectix
Distributor:	Conexus	Firmware
Telephone:	02 9975 2799	02 4721 7211
Facsimile:	02 9975 2966	02 4721 7215
Reviewer:	Stephan Somogyi	

Windows 98 Emulators

STILL A SLUGGISH PROPOSITION

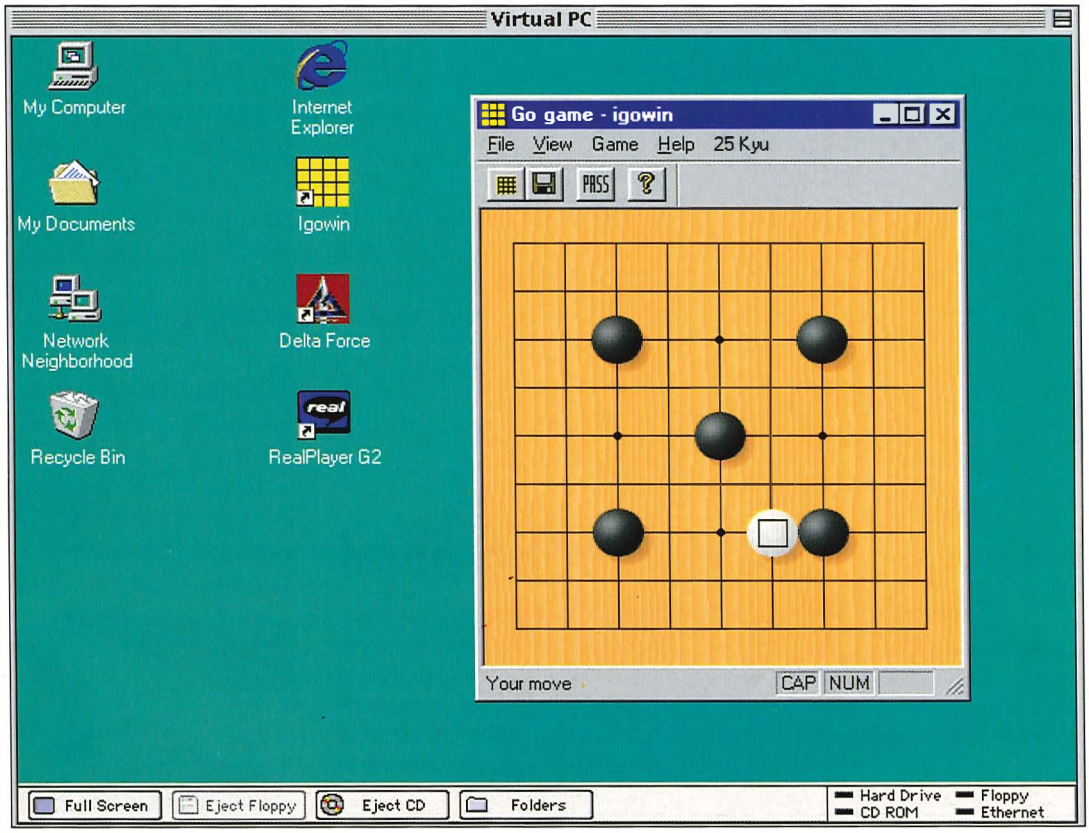
Like it or not, because much of the software that's available for the PC lacks a Mac counterpart, you occasionally need to turn to Windows applications to get your work done. But depending on the application, you may be able to use a software emulator running on your Mac rather than having to use an actual PC.

Unfortunately, our lab testing made one thing abundantly clear: if you need to run resource-intensive Windows software, emulators aren't for you. On a Power Macintosh G3/300, Connectix's Virtual PC 2.1.1 and Insignia Solutions' SoftWindows 98 5.0.4 delivered less than one-fifth the performance of our baseline system, a PC based on a 300MHz Intel Celeron processor. That said, both emulators are fast enough and compatible enough for quick forays into the Windows world.

Virtual PC and SoftWindows 98 are philosophically identical: they recreate a PC—including its processor (an MMX-equipped Pentium)—in software and then run Windows and Windows software in this simulated environment. And their performance is remarkably similar: our overall benchmark scores show a difference of just five percent between the two.

But running the emulators with applications that make heavier use of networks points up some compatibility differences. For example, SoftWindows 98 takes advantage of the Mac's built-in TCP/IP networking, so you don't need to configure a separate IP address for Windows. More important, if your Mac is already connected to the internet via PPP, SoftWindows 98 uses that connection instead of requiring you to create one from within Windows—a feature you'll appreciate when you're on the road.

The downside is that SoftWindows 98 is incompatible with some networking software. Virtual PC had no compatibility problems with the networking software we tested, although it requires a second IP address in addition to the one already assigned to the Mac and can't use an extant Mac PPP connection.



Virtual PC's window border contains useful LED-like activity indicators as well as buttons for accessing often used features.

Windows 98 Emulators

Emulation in the slow lane / SoftWindows 98 vs Virtual PC

The best results are in red. *Reference system are in italics.* **Business Winstone 98 scores are absolute numbers.** Longer bars are better.

	Business Winstone 98
Connectix Virtual PC 2.1.1	4.1
Insignia Solutions SoftWindows 98 5.0.4	4.3
Intel Celeron–based 300MHz PC	*22.3*

For more information on the ZD Benchmark Operation's Business Winstone suite, see <www.winstone.com>. For detailed information on our tests, see <www.macworld.com/tests>. Macworld Lab testing supervised by Jeffy Milstead.

Both emulators use large Mac files as their virtual hard disks; both also have a quick-launch feature that lets you put the Windows environment to sleep and reawaken it without having to go through the full boot process, though Virtual PC's implementation of this feature is more than twice as fast as SoftWindows 98's. And although neither emulator has any problem running a variety of basic Windows software, contemporary games really want to run on actual PC hardware.

Despite their similarities, the two emulators differ in some significant ways. Virtual PC has a much more polished user interface, handy LED-style indicators that show whether hard-disk or network activity is going on, and many smaller useability details. In contrast, SoftWindows 98's interface offers so many configuration options as to be daunting for the novice, and its answer to the right mouse button—pressing the equal-sign key or command-R—is a poor solution.

The bottom line

Windows 98 emulation is still a sluggish proposition, but it's fast enough for less performance-critical applications. While the emulators we tested perform similarly and have comparable features, SoftWindows 98 5.0.4's ability to use the Mac's PPP connection is compelling for mobile users. Virtual PC 2.1.1 is more compatible overall, has a cleaner user interface, and offers a faster quick-start mode. If you decide to use an emulator, your decision will come down to which is more important to you: Virtual PC's compatibility or SoftWindows 98's convenience.

AT A GLANCE

Pros

SoftWindows 98: Uses Mac TCP/IP networking; marginally faster than Virtual PC. **Virtual PC:** Useful I/O indicators; clean interface; better compatibility with Windows applications; fast quick-start feature.

Cons

SoftWindows 98: Rough interface; comparatively slow quick-start feature; unsuitable for many games. **Virtual PC:** Needs its own IP address; marginally slower than SoftWindows 98.

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Type:	Painting
Rating:	
RRP:	$629 ($229 education)
Publisher:	MetaCreations
Distributor:	Scholastic New Media
Telephone:	02 4721 7211
Facsimile:	02 4721 7215
Reviewer:	Ben Long

Painter 5.5 Web Edition

NATURAL-MEDIA PAINTING TOOL GETS NEW WEB-DESIGN FEATURES

Don't be confused by the name. There is no 'non-web edition' of MetaCreations Painter 5.5 Web Edition. Instead, this is an upgrade to MetaCreations Painter 5.0, the popular natural-media painting program. Though most of the upgrade's new features are web specific, long-time users will be glad to see a new editable text function and support for Adobe Photoshop 5's layers complementing Painter's existing array of painting tools.

It slices! It dices! It juliennes!

Painter 5.5 sports the same interface as version 5, a somewhat palette-heavy, complicated affair that more or less succeeds in organising the program's many tools and variants. Painter also makes extensive use of floaters, similar to layers in Photoshop. However, unlike Photoshop layers, floaters can be different sizes and can function as plug-in utilities as well as image repositories.

Painter's tool set is both a strength and a weakness. No other product comes close to offering the sophistication and power of Painter's brushes and tools, but the sheer number of options makes this a program that can take a while to learn. Still, the results are worth the effort.

Painter 5.5 adds a new Image Slicer plug-in floater that performs automatic slicing on any document. Web slicing chops a graphic into segments you can reassemble in an HTML table. Slicing typically makes images download faster, particularly if only one slice is changing from page to page.

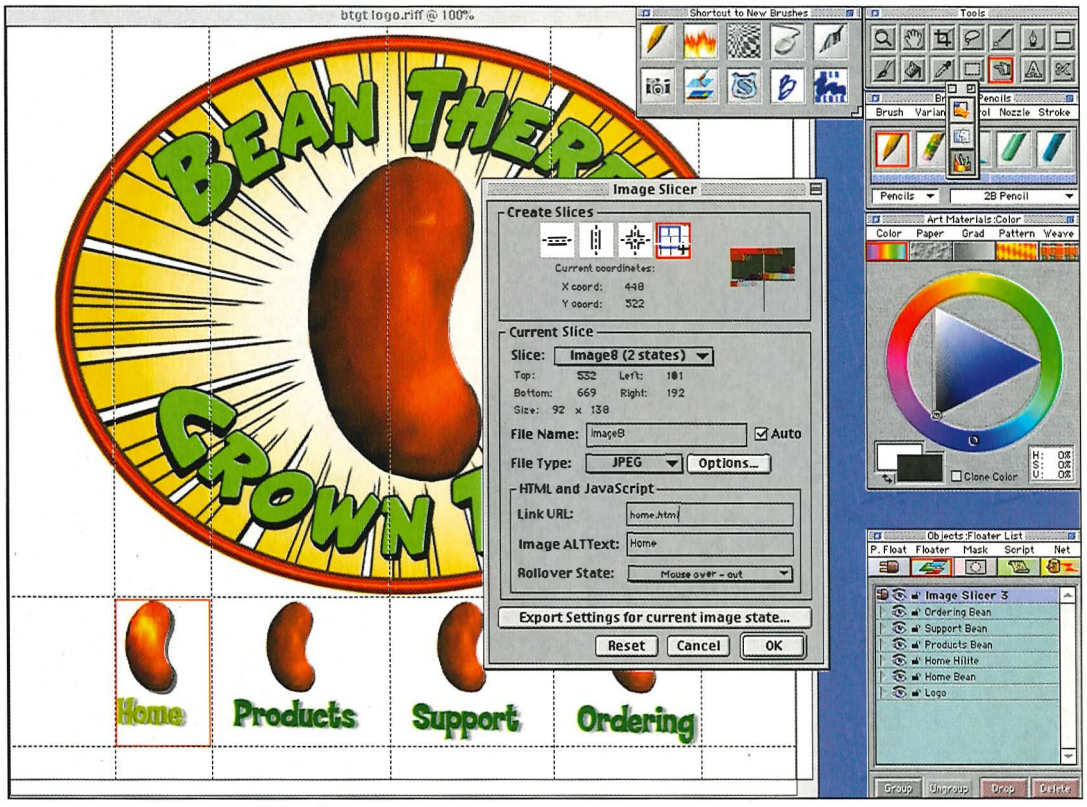
You define slices in the Image Slicer floater by placing and dragging horizontal and vertical rules over your image. In addition to specifying file names and URLs for each slice, you can also define separate compression settings, allowing you to choose the best compression options for individual segments.

When you export a sliced image, Painter automatically creates a separate document for each slice, as well as an HTML file that reassembles the images into a table.

Because slicing is implemented as a plug-in floater, you don't have to flatten your image, so you can slice while preserving all of your separate layers. However, we'd like to see a preview window that shows the effects of different compression settings.

Rollovers

The Image Slicer also lets you create JavaScript rollover effects in which buttons appear in different states depending on mouse actions. You generate rollovers by creating floaters for each button state and then slicing your image so that each button goes on its own slice. Once this is done, you can modify each floater to create the look you want for a particular



The Image Slicer floater in Painter 5.5 Web Edition lets you create JavaScript rollover effects.

Painter 5.5 Web Edition

state. When you're finished, you export the JavaScript code needed to create the rollover effects; you must export each button state separately.

This method feels a bit clunky, but it works and it forces you to keep your document organised into layers with different buttons and states, making it easy to edit your work later.

Dynamic text

Because web pages are constantly updated, MetaCreations has added a Dynamic Text tool, a plug-in floater that lets you add editable text to your Painter documents.

You enter text in a dialogue box instead of typing directly in your image, but the program updates the image in real time, letting you see the effects of font, colour, tracking, translation and leading controls. The plug-in also lets you fill text with a pattern and add automatic, editable drop shadows.

Painter 5.5 can now automatically create server- and client-side image maps based on URLs attached to each floater. You can also preserve layering in imported Photoshop files, but the program cannot export layered Photoshop files.

MetaCreations is touting several other web features in Painter 5.5 that are actually holdovers from previous versions. For example, the Bevel World feature is great for making buttons, and seamless texturing is useful for creating backgrounds.

The bottom line

Except for editable text, Painter 5.5 provides no new painting or image-editing tools. It's nice to have the new web features built into the program, particularly since they let you preserve your image's layering. However, serious web designers probably already have tools for performing these tasks.

If you do web design and spend much time in Painter, these additions are worth the upgrade price. Other users might want to wait for an upgrade with more new painting features. Whatever you use it for, Painter 5.5 Web Edition's unique tool set makes the program an impressive, powerful image-creation utility.

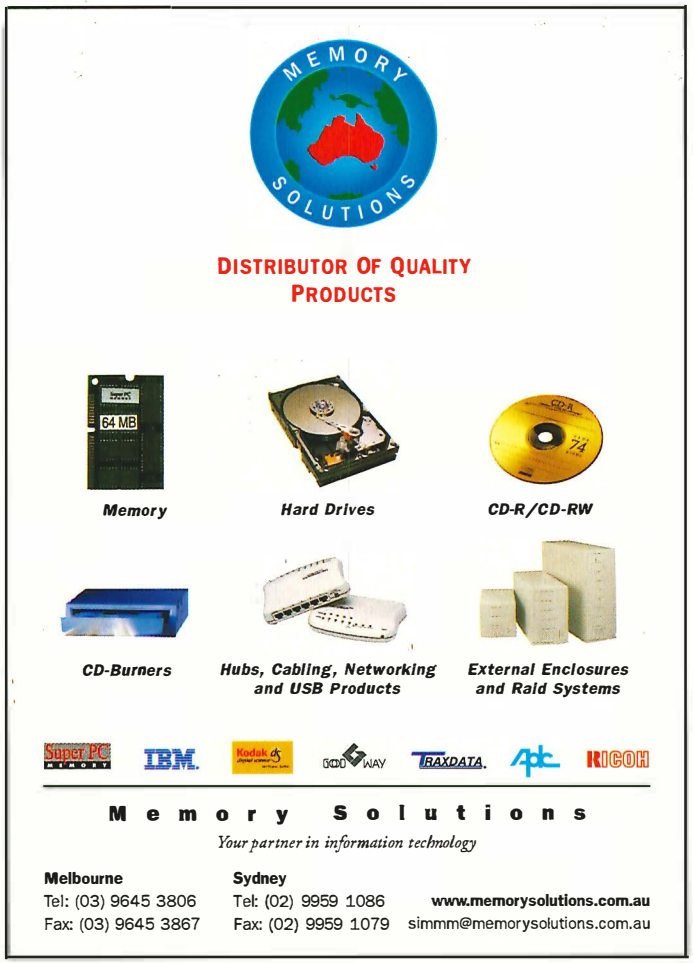
AT A GLANCE

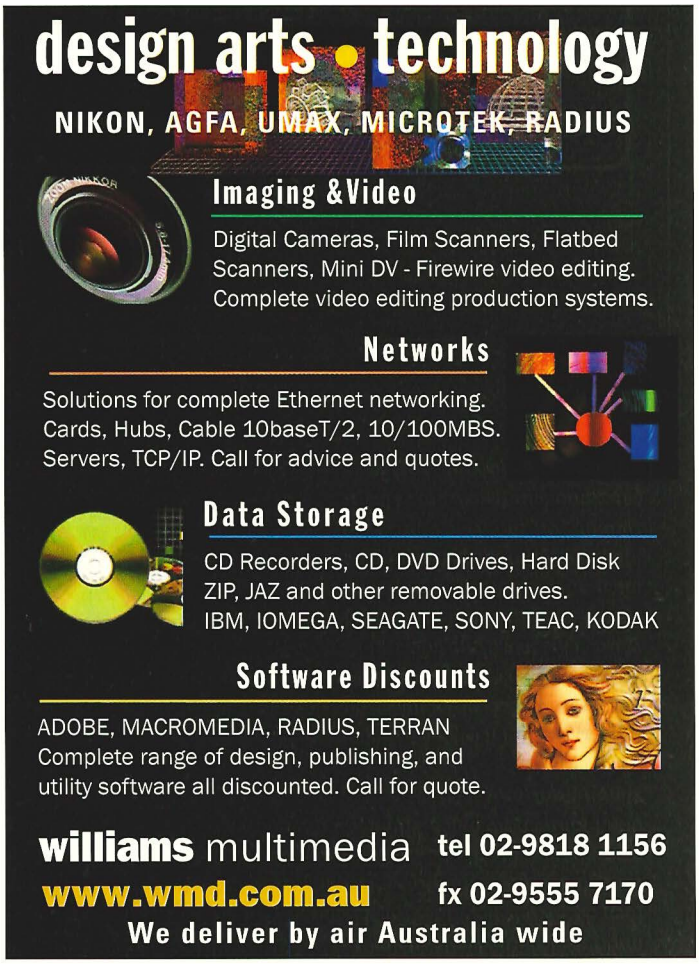
Pros

Image slicing lets you preserve layering; separate compression for each slice; strong painting tools; editable text.

Cons

No new painting tools; interface still complicated.





Type:	Web graphics
Rating:	4
RRP:	$295
Publisher:	Adobe Systems
Distributor:	Adobe Systems Australia
Telephone:	02 9418 8488
Facsimile:	02 9418 8489
Reviewer:	Jason Snell

Adobe ImageStyler

EASY-TO-USE WEB-GRAPHICS TOOL

After years of making do with print-publishing programs, web designers have received a flurry of powerful web-graphics tools. While Adobe ImageReady and Macromedia Fireworks have drawn most of the attention, the most impressive release of the lot may be Adobe ImageStyler, an easy-to-use web-graphics program that can be a vital addition to any web designer's toolbox.

It's all about objects

ImageStyler doesn't let you create graphics pixel by pixel. Instead, you place such objects as EPS graphics, bitmapped image files, and text on a pasteboard. When you're finished, you can export the graphics in a variety of web formats.

Once you've placed an object in ImageStyler, you can apply up to five layers of transformations. You can control an object's colour or opacity; apply a 3D bevel or emboss effect; distort, shift or blur the image; and much more. For example, to create a drop shadow, you add a new layer, shift its position, change its colour to black, apply a blur, and reduce the opacity. Once you've done this, the drop-shadow effect will be consistent even if you change your object's size or shape, or replace it with a different object.

ImageStyler is billed as a tool for businesspeople and others who are not graphics professionals. However, the program's cornucopia of controls will appeal more to graphics pros than to casual users, who may find the many settings too complicated.

Still, ImageStyler doesn't leave less advanced users behind. Its Styles palette contains dozens of preformatted styles, each containing multiple, multilayered effects. A Textures palette lets you quickly apply textures. A Shapes palette provides several dozen EPS objects that can serve as the basis for buttons and other elements.

ImageStyler provides a fast and easy way to create JavaScript-based rollover images. You make copies of an object, each corresponding to a different button state, and modify the copies to your liking. An Export command automatically creates GIF or JPEG images for each button, along with an HTML document containing JavaScript code.

Another time-saving feature is the ability to make an alias of an object—a duplicate that retains the original object's attributes. You can modify an object's shape or colour and see the change immediately applied to that object's aliases.

ImageStyler's most innovative feature may be HTML batch-replacement, which lets you replace HTML-styled text with graphics containing the same text. For example, if you have an old web site containing ugly headers that use the <H1> style, ImageStyler can search the HTML code for that style, pick out the text, generate a graphic using that text, and replace the header with a reference to the new image.

The bottom line

ImageStyler is a versatile, powerful web-graphics tool that has something for everyone, from businesspeople to professional web designers. It lacks animation features but otherwise covers all the bases for creating web graphics. If you spend time creating banners, buttons and other elements for web pages, ImageStyler will prove invaluable.

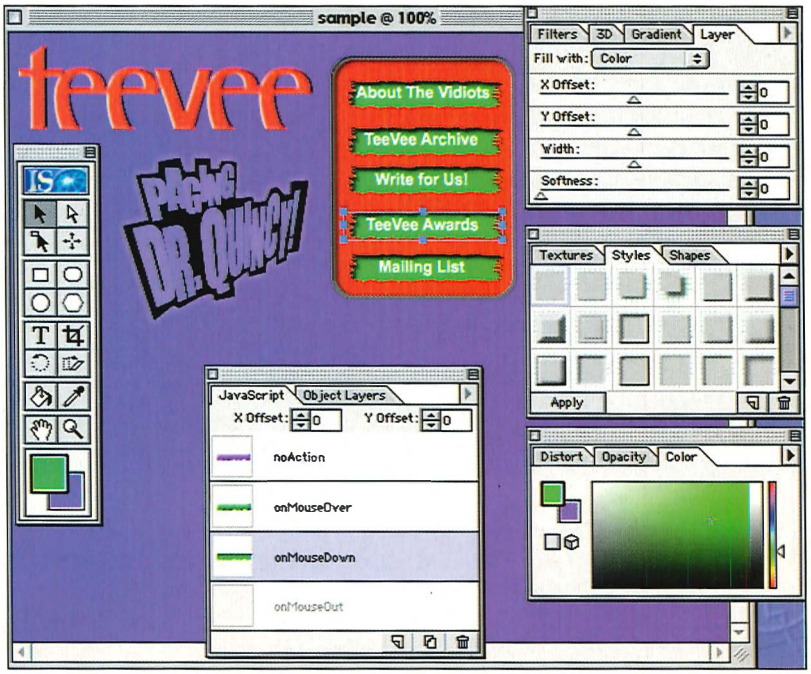
AT A GLANCE

Pros

Easy-to-use pasteboard interface, powerful image-transformation tools, simple rollover-creation interface, ability to batch-transform HTML text into graphics.

Cons

No animation tools.



ImageStyler's floating palettes make it easy to create buttons and other web elements.

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Free but not easy

Q I am running FreePPP 2.6.2 on a Performa 5260/120. In FreePPP's Setup, Modem and Edit dialogue boxes, there are many confusing choices. Port speed: Which is the best setting for a 28Kbps modem? I have had three different suggestions, from three sources: 57600 (Apple); 38400 (my ISP) and 115200 (a web site offering speed-up advice). Flow control: CTS, RTS, DTR. Which is right? Modem initialisation string: AT & FX3 or Auto Detect. What on earth does this mean?

Ken Hoyle

Paul: Okay, the first thing to keep in mind is that fine-tuning a FreePPP connection can be time-consuming, as there many configuration options.

Geoff: Your best setting will vary slightly depending on your modem model, your Mac model, the type of cable you're using to connect the two, and even what software you're using at the same time. While it's easy to set up FreePPP so it works, it may take further tweaking to make it operate at its peak.

Paul: First let's look at the modem-port speed. 28.8 kilobits per second (Kbps) is the maximum raw speed at which your modem can talk to another. However, modems these days have enough smarts to improve on their raw speeds using on-the-fly data-compression techniques. The v.42bis standard, for example, can deliver compression ratios of up to 4:1. So, to get the best theoretical throughput using v.42bis, a 28.8Kbps modem would need to be fed data at four times its raw speed, or at 115.2Kbps.

Geoff: That's only one side of the port-speed equation though: we must also ensure that your Mac is capable of reliably talking through it's modem port at 115Kbps.

While most Macs now have circuitry that does nothing but handle the serial ports, part of this task is handled by the processor itself on some low-end and older Macs.

As you'd surmise, the processor has a long list of other demands on its time. So, though it sounds bizarre, you may actually find a serial port speed of 56Kbps actually works faster than 115Kbps on one of these older Macs, because it is not spending as much time saying "I'm sorry, say again?"

Paul: The other key player is the modem cable itself. It needs to be a 'hardware handshaking' cable (available through your local Apple retailer) so your Mac need not interrupt the actual flow of data simply to give the modem instructions, such as pause or resume sending data. If you have such as cable, set the flow-control option to CTS & RTS (DTR).

Geoff: Next is the modem initialisation string. This is a series of commands that configure how the modem behaves, and it can be one of the most fiddly things to get right. The good news is you can first try using the Auto Detect option, which lets FreePPP identify your modem and use one of it's preset initialisation strings. If you later decide you want a string designed for your modem model in particular, try performing a search for web pages that name your modem model and contain the words 'Macintosh' and 'init string'.

Paul: The final measure of your FreePPP connection is testing it. Open a connection, then start downloading a file. While this is happening, switch back to FreePPP Setup, and choose Information from the File menu. This gives you a good overview of how quickly things are going, but keep in mind that slow speeds may not be due to your connection. It could be that the server you're downloading from is busy or slow, for example.

For a closer look, click on More Details. This gives you a lot of low level information, and—for our purposes—unnecessary information, but down the left side there's some interesting statistics (see figure one).

Keep an eye on the error and overrun fields. If your connection is solid, these should remain at or near zero, even after using the link for a while. If they start to sharply climb, it's time to look at dropping the serial port speed, using a different init string, or switching to a different flow-control protocol.

Geoff: Last, keep in mind that those errors can also occur if, say, you're doing processor-intensive work in another application, which may cause the Mac to simply become too busy to catch everything thrown at it.

Copying the original

Q Is there a way you can copy an original file using the alias?

Tony Blackwell

Geoff: First, we'll look into why this seemingly simple thing can seem so difficult.

An alias is nothing more than a minuscule empty file that 'points' to an original file or folder. When you double-click an alias, drag an object onto it, or even select it in an open or save dialogue box, the effect is usually the same as if you were performing that operation on the original file or folder to which the alias points.

To create an alias, select a file or folder then choose Make Alias from the Edit menu in the Finder. The resulting alias can be moved and renamed pretty much as you wish, while still 'pointing' to the original.

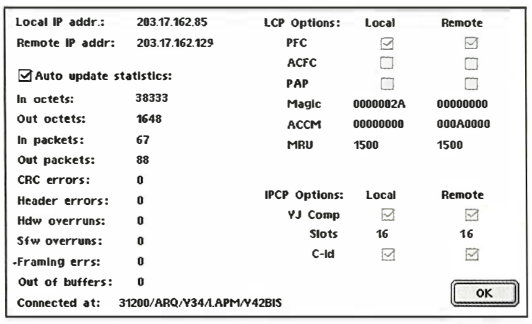


Figure one: Keep an eye on the error and overrun fields in FreePPP's More Details dialogue box.

Paul Baily and Geoff Perkins answer our readers' questions.

Email your query to: <steve@niche.com.au> or write to: Help Folder, *Australian Macworld*, PO Box 2043, St Kilda West, 3182

Usually, what you do to the alias, you do to the original. One of the only times an alias is treated as file in it's own right, however, is when you move or copy it, and this is the source of your problem.

Paul: My first thought would be to look at one of the tools you have already. Namely, AppleScript (see page 30). It's often overlooked, perhaps because it's the quiet butler of Mac OS, going about it's tasks largely unnoticed. For example, I have a script that connects to my ISP several times each day, checks my email, then disconnects again. It's so simple and unobtrusive that I rarely give it a second thought, but it gives me the opportunity to have my first coffee a few minutes earlier while my Mac catches up on the latest gossip.

An AppleScript that could help you with your problem is shown in figure two. Save it as an application in Script Editor's Save As dialogue box.

The first line of this script means that it is activated when an alias is dragged onto the icon that was created when you saved the application in Script Editor.

The second line determines to where you'd like to copy the original file or folder that the alias represents.

The third line is a fail-safe, so you can exit the "Where would you like this to go?" dialogue box by clicking Cancel.

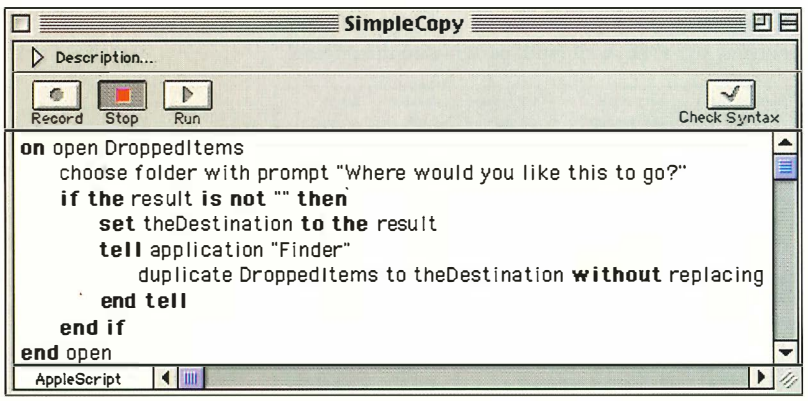
The rest of the script, up to the 'end' statements, copies the file—not the alias, but the original file or folder it represents—to your chosen destination.

Of course, you'd want to add some more smarts, such as error checking, before using a script like this one on a daily basis, but you get the idea.

Geoff: If scripting isn't your cup of tea, have a look at Roland Gustafsson's SimpleBackup, which is 'thankyouware' from <www.acts.org/roland/thanks>.

It's a few years old, but lives up to its name in that it provides a simple and effective way to copy items from one location to another. It does this by copying the originals of aliases, placed in a Backup Items folder to a destination you choose. It's even smart enough to only copy changed or new files, if you choose. I find it a no-fuss rock-solid utility that suits situations in which you need to copy files and folders to fixed locations.

Figure two: an AppleScript for copying files in response to dragging their aliases.



Execute PC files

Q Is there an application that runs or converts '.exe' files? Or, can PC users save these files in a Mac-compatible format?

Peter Delaney

Geoff: A file with a name that ends in '.exe' is an executable file for a PC, equivalent to an application on a Macintosh. That's where the similarity ends though. Macintosh computers are very different from Intel-standard PCs running Windows. They use completely different instructions and have quite different architectures. Even with software sold on 'hybrid CDs', there are two separate versions of each executable file on the CD—one for Mac OS and one for Windows.

Paul: Though it's commonplace these days for data files to have a common cross-platform structure, there is no middle ground when it comes to executable files. Those ending in '.exe' are Windows or DOS programs, and if you want to run them on your Mac you need a Windows environment, such as SoftWindows 98 or Virtual PC (see page 65).

Geoff: Or, if performance is paramount, one of the hardware-based products, such as OrangeMicro's OrangePC cards, is the way to go. These cards, which are distributed to Apple retailers by Symbiotic (03 9836 4482, fax 03 9830 1823), are effectively computers in their own right. They have their own processor, for running DOS and Windows software, but they share your Mac's I/O devices, video and so forth. Effectively you end up with two computers—a Mac and a PC—in the same box.

Paul: Two noteworthy exceptions:

The self-extracting Zip archive contains executable code and has a '.exe' file extension, but the archive itself is data. Drag one of these onto a Zip-savvy decompression program, like Aladdin System's StuffIt Expander (included on the Mac OS 8.5 installer CD-ROM), to extract its contents.

Second, Windows users sometimes save images, sounds and movies so they can self-play on PCs without launching a separate Windows viewer or player program. If this describes your correspondents, ask them to uncheck this option (in their Save, Save As or Preferences dialogue boxes), so you can open their files in your own Macintosh viewer or player program.

Slowed by the software

Q I have a Power Mac 7200/90 with 32MB of RAM, running Mac OS 8. Using the internet on this machine is so slow compared to doing so on my wife's Pentium 90. I am using the GeoPort modem running at 33.6Kbps. The screen redraws so slowly that I am typing this one chunk at a time (a file is downloading in the background). I have read that the 7200 has a serial architecture (presumably bottleneck city) and

therefore wondered if a graphics card would help reduce the processor's workload during internet sessions. Also, I presume a dedicated modem—rather than the GeoPort—would free the processor, but I was so impressed with Apple giving me a free 28.8Kbps and then 33.6Kbps upgrades for the initially 14.4Kbps GeoPort that I am loathe to replace it. My other thoughts were to upgrade the L2 cache from 256K to 1MB, but I don't know how much difference it would make.

Simon Eddison

Geoff: The GeoPort Telecom Adaptor is a really interesting piece of engineering, since it can act like a modem, but is actually half hardware and half software. This has its upside and its downside.

Paul: The upside is the GeoPort pod and software integrate beautifully with the operating system, because much of its modem functions are handled by software running on the Mac's processor, rather than by dedicated modem hardware. This is why Apple could offer 28Kbps and 36Kbps software upgrades for a device that originally was no faster than a 14.4Kbps modem. The downside is your Mac must devote time to both emulating a modem and to it's usual housekeeping. Because Mac OS 8 multitasks in a cooperative rather than pre-emptive fashion (that is, each program or 'process' is responsible for sharing the processor with all the other processes), running modem software flat out will likely produce the results you're seeing.

Geoff: As you can tell, we're thinking that the bottleneck is here—with your GeoPort—rather than in the video subsystem. You mention that your Mac has to catch up with your typing, which suggests that the processor, rather than the video circuitry, is struggling.

Paul: Though adding a faster video card or more L2 cache would put more spring in your Mac's step, you'll see a greater performance boost on your internet travels with a good hardware-based modem.

Geoff watches the fortunes of the Macintosh from Adelaide—it's a pretty good view these days. Paul lives in Brisbane, but that's okay, they have Macs there too.

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PICA SOFTWARE

It's possible to print a multipage AppleWorks Office 5 (ClarisWorks) word processing document on both sides of the paper without using QuickDraw GX or a printing-utility program. Here's how:

First, open the document you want to print. Choose Document from the Format menu and turn on the Mirror Facing Pages option in the resulting dialogue box; this matches the inside and outside margins on facing pages. Select the Facing Pages Side-By-Side option in this dialogue box to display pages side by side on screen (see figure one). This doesn't affect printing but makes it easy to distinguish the right (odd-numbered) pages, which print on the front of the paper, from the left (even-numbered) pages, which print on the back.

Print the odd-numbered pages first by choosing Print from the File menu, selecting the Right Pages option (see figure one), and clicking Print. Then, with most printers, your next step is to reverse the order of the printed pages, turning them over so that page one is on top and facedown, page three is facedown under page one, and so on.

However, some printers feed paper in a manner that saves you from reversing the order of the odd-numbered pages before refeeding them.

Next, place the printed pages back into the printer facedown, observing the correct page orientation for your printer. If the last page of the document is odd numbered, don't put it back into the printer—there's nothing to print on its back. Last, print the even-numbered pages by choosing Print from the File menu, selecting the Left Pages option, and clicking Print.

Bruce Farah

It works in Microsoft Word too...

Here's how to halve the amount of paper it takes to print out a Word document:

Open your document and choose print. Then, select the Microsoft Word printing options dialogue box (by choosing Microsoft Word under the pop-up menu marked General, if you're using the LaserWriter 8.6 printer driver.) Next, select the Odd Pages option from the pop-up menu marked 'All pages in range', and print. Feed your printed pages back and specify Even Pages before hitting print again in the same dialogue box. The end result will be a two sided print-out.

Note, should your printer order documents sequentially (as do most laser printers), you will need to hit the Word Options button and the click the Reverse print order check box before printing on the second side. This should place the last page on top (face up), so the reverse side of the first printed page will be at the bottom (to be feed back to the printer). Also, if the number of pages printed is odd, the last page will stay in the printer, so remove it manually.

David Salotti

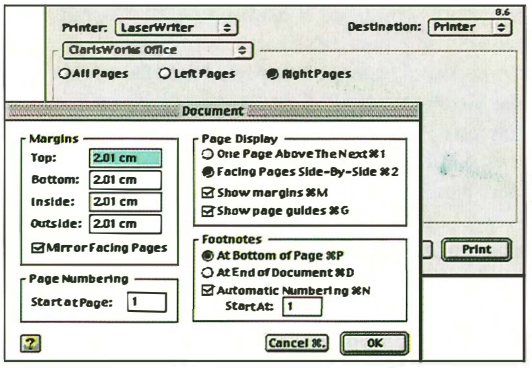


Figure one: First, turn on the Mirror Facing Pages and Select the Facing Pages Side-By-Side options (foreground), then the Right Pages option (background). This screen-shot shows the options that become available when using Microsoft Word 98 with the LaserWriter 8.6 printer driver.

PICA TIP OF THE MONTH

Here's how to save a little money when printing AppleWorks Office 5.0 (ClarisWorks) documents from certain inkjet printers that use both black and full-colour ink cartridges.

First, duplicate your document twice, and keep the original elsewhere on your hard disk.

Start with the colour cartridge in the printer. Before printing, select all the text in your first duplicate document and change it to white. For example, if you're working in the program's Drawing mode, choose Text Colour from the Format menu. Or, if you're working in the program's Word Processing mode, select white from the Text Colour button on the Button Bar (see figure two). Then, print however may copies you need. This prints the colour pictures and not the text, saving the black print cartridge.

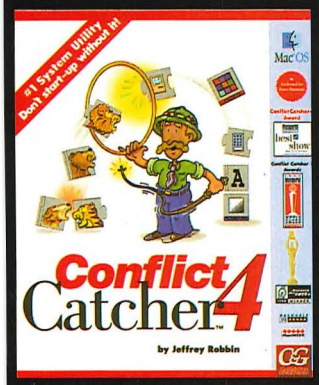
Figure two: A sample Button Bar from the AppleWorks Office 5.0 in Word Processing mode. The Text Colour button is between 'A' and 'Body'.

Now, open the second duplicate document and replace the colour cartridge with the black-only one. Then, if possible, use the Fill Colour and Pen Colour tools on the Tool Bar to change your graphics to white. Delete those images you cannot change to white in this way, then insert space, tab and return characters or alternate all-white images to ensure your text flows in the manner intended.

Next, refeed the paper with the colour graphics, printing your black text. Your printing is finished and you have conserved your black cartridge.

Todd Woodward

FREE BONUS



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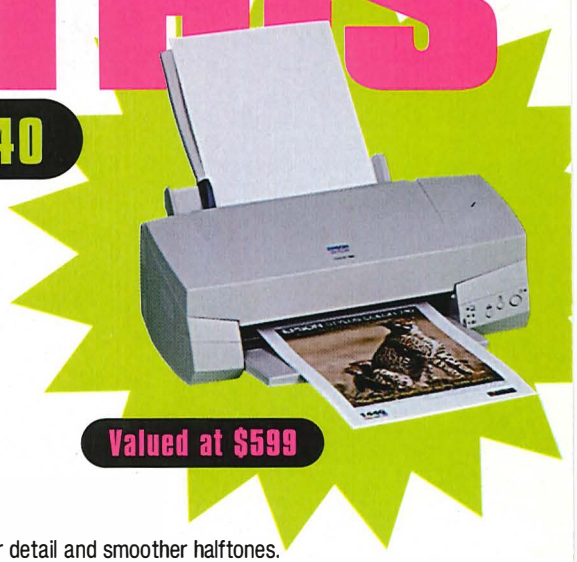

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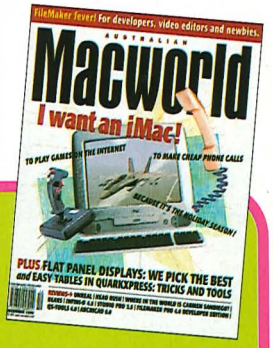

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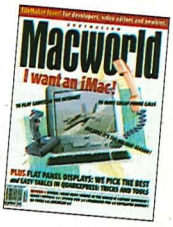

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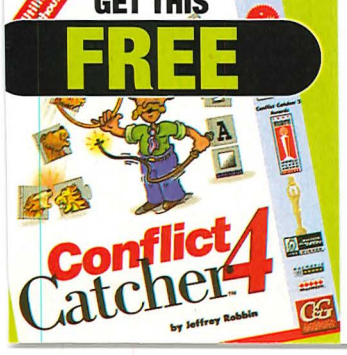

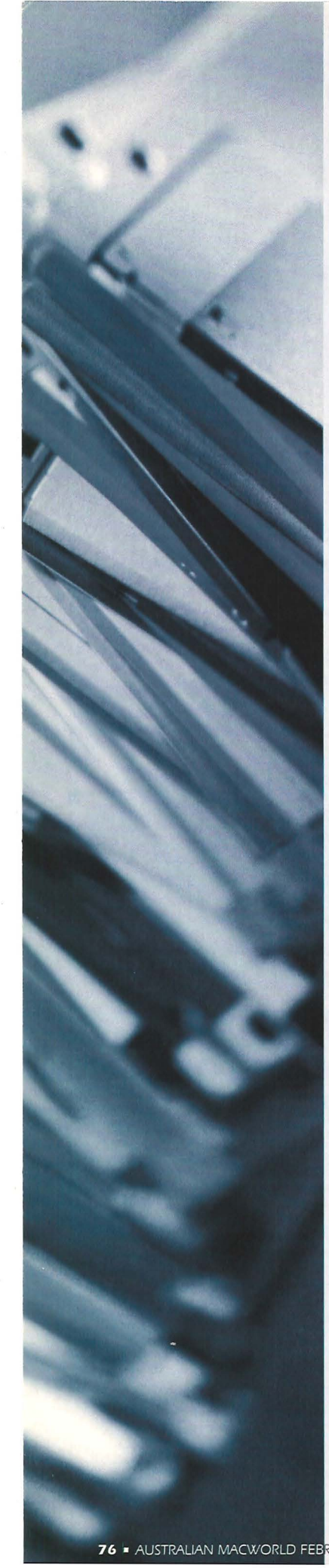

Finder

Apple systems

All prices and specifications taken from Apple's latest pricing documents at press time. All prices include sales tax.

System	RRP	Chassis	Processor	RAM / max	L2 cache
iMac	$2545	all-in-one	750 @ 266MHz	32MB / 256MB	512K
Mac OS 8.5.1; 2x USB ports; 10/100BaseT Ethernet; 56Kbps modem; 24x CO-ROM; keyboard/mouse; software bundle§.					
Power Mac G3	$3495	minitower	750 @ 300MHz	64MB / 1GB	512K
Mac OS 8.5.1; 24x CD-ROM; 2x USB ports; 2x FireWire ports, ADB port, 10/100BaseT Ethernet; 3 vacant 64-bit PCI slots; mouse/keyboard.					
Power Mac G3	$4495	minitower	750 @ 350MHz	64MB / 1GB	1MB
Mac OS 8.5.1; 5x DVD-ROM; 2x USB ports; 2x FireWire ports, ADB port, 10/100BaseT Ethernet; 3 vacant 64-bit PCI slots; mouse/keyboard.					
Power Mac G3	$5495	minitower	750 @ 350MHz	128MB / 1GB	1MB
Mac OS 8.5.1; 24x CD-ROM; 100MB Zip; 2x USB ports; 2x FireWire ports, ADB port, 10/100BaseT Ethernet; 3 vacant 64-bit PCI slots; mouse/keyboard.					
Power Mac G3	$6695	minitower	750 @ 400MHz	128MB / 1GB	1MB
Mac OS 8.5.1; Ultra2 SCSI card; 24x CD-ROM; 2x USB ports; 2x FireWire ports, ADB port, 10/100BaseT Ethernet; 2 vacant 64-bit PCI slots; mouse/keyboard.					
Power Mac G3 server	$7295	minitower	750 @ 350MHz	128MB / 1GB	1MB
Mac OS 8.5.1; AppleShare IP 6; Apple Network Assistant 3.5; SoftRAID 2.5.1; Ultra2 SCSI card; 24x CD-ROM; 2x USB ports; 2x FireWire ports; ADB port; 10/100Base					
Power Mac G3 server	$10,995	minitower	750 @ 400MHz	128MB / 1GB	1MB
Mac OS 8.5.1; AppleShare IP 6; Apple Network Assistant 3.5; SoftRAID 2.5.1; Ultra2 SCSI card; 24x CD-ROM; 2x USB ports; 2x FireWire ports; ADB port; 10/100Base					
PowerBook G3/233 †	$4995	laptop	740 @ 233MHz	32MB / 192MB	none
Mac OS 8.5; 6x CD-ROM; floppy; infrared; PC Card slots and expansion bay.					
PowerBook G3/233	$6595	laptop	750 @ 233MHz	32MB / 192MB	512K
Mac OS 8.5.1; 20x CD-ROM; 10Base-T Ethernet; 56Kbps modem; infrared; 2 expansion slots; PC card slots; S-video out.					
PowerBook G3/266	$8295	laptop	750 @ 266MHz	64MB / 192MB	1MB
Mac OS 8.5.1; 20x CD-ROM; 10Base-T Ethernet; 56Kbps modem; infrared; 2 expansion slots; PC card slots; S-video out.					
PowerBook G3/292	$9695	laptop	750 @ 266MHz	64MB / 192MB	1MB
Mac OS 8.5.1; 20x CD-ROM; 10Base-T Ethernet; infrared; 2 expansion slots; PC card slots; S-video out.					
PowerBook G3/300	$11,795	laptop	750 @ 300MHz	64MB / 192MB	1MB
Mac OS 8.5.1; 20x CD-ROM; 10Base-T Ethernet; 56Kbps modem; infrared; 2 expansion slots; PC card slots; S-video out.					

Monitors: Design 520 Display ($545); LG StudioWorks 795SC ($1085); Apple Multiple Scan 720 Display ($1200); ColorSync 850 Display ($3300); Studio Display 17 ($1100); Studio Display 15.1 ($2395); Studio Display 21 ($3300).

*Apple's Premium Software bundle varies from time to time and from product to product, but typically includes the Apple Internet Connection Kit, ClarisWorks Office, MacLinkPlus/Easy Open Translators, Microsoft Encarta, World Atlas, Microsoft Dinosaurs, Casualty Kid First Aid, Descent, F/A–18 Hornett, Crystal Caliburn Pinball, MacLinkPlus, Click Art, Australian Product Reference Guide, PhotoFlash, Apple Personal Modem, Telecom 3.0, Apple Video Player, HyperCard Player, At Ease, SimCity 2000, Spaceway 2000, Spin Doctor, Super Maze Wars, Lemmings, Eric's Solitaire Sampler, Peter Pan Sampler.

Secondhand systems

This list is compiled by Mac Rent as an approximate guide to secondhand prices. All units are sold with warranty support and can be supplied internet-ready.

Discontinued Macintosh

Mac Plus	$50
SE 4/40	$100
SE 30 5/40	$200
• SE 30 8/80	$200
Classic 4/40	$100
Classic 4/80	$150
Classic II 4/80	$200
• Colour Classic 4/40	$300
LC 4/40	$100
LC II 4/40	$150
LC III 5/80	$200
LC475 8/250	$350
LC520 4/80/CD	$400
LC575 8/250/CD	$500
LC630 8/500 (no FPU)	$300
LC630 8/350/CD (with FPU)	$400
LC630 12/500 DOS	$400
Mac II 5/40	$50
Mac IIx 5/80	$50
Mac IIcx 5/80	$200
Mac IIsi 5/80	$200
Mac IIci 5/80	$200
Mac IIfx 8/80	$200
Mac IIvi 5/80	$200
Mac IIvx 8/80	$300
Mac IIvx 8/230/CD	$350
• Centris 610 8/230	$300
Centris 650 8/230/CD	$400
Centris 650 20/230/CD	$450
Mac Portable 2/40	$100
Quadra 605 8/250	$200
Quadra 610 8/160	$300
Quadra 610 8/250/CD	$400
Quadra 650 8/230/CD	$500
Quadra 660AV 8/230/CD	$500
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Quadra 950 8/230	$500
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Quadra 800 8/230	$500
Quadra 800 20/500/CD	$500
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Performa 5200 12/800/CD 14.4 modem	$1000
Performa 5200TV 12/800/CD 14.4 modem	$1100
Performa 5260/75 12/800/CD	$1100
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9GB (Ultra2 SCSI)	ATI Rage 128 with 16MB graphics RAM
h four-port hub card);1 vacant 64-bit PCI slot; mouse/keyboard.	
two 9GB (Ultra2 SCSI)	ATI 128 with 16MB graphics RAM
h four-port hub card); 1 vacant 64-bit PCI slot; mouse/keyboard.	
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4GB (IDE)	14.1" active-matrix display; 4MB VRAM; ATI Rage LT
4GB (IDE)	14.1" active-matrix display; 4MB VRAM; ATI Rage LT
8GB (IDE)	14.1" active-matrix display; 4MB VRAM; ATI Rage LT

§ AppleWorks, Internet Explorer, Outlook Express, FaxSTF, MDK, Williams-Sonama Guide to Good Cooking, Nanosaur, Kai's Photo Soap.
† Older model.

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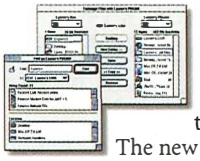

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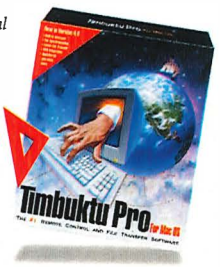

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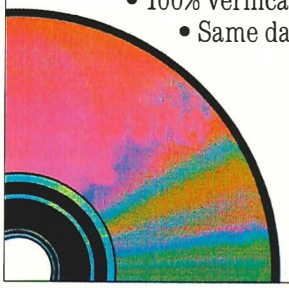

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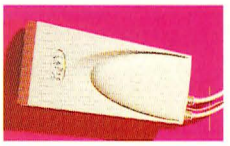

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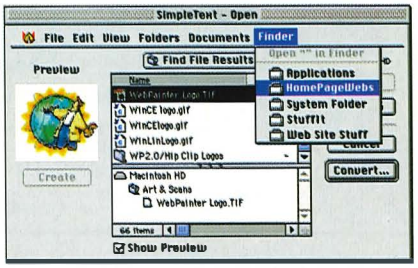

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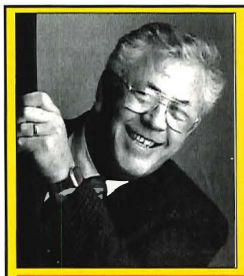

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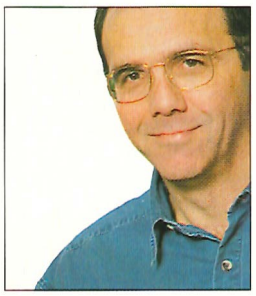
Getting your words' worth



By Peter Schmideg

New technologies can sit comfortably with literacy

There is always someone ready to write off a previous system, technology or way of life when something new comes along.

Still going to cinema

I remember when VCRs first came out (I must be really old). The doomsayers were predicting the end of cinema. "Why go to the movies when you can buy a video?" they would say (rental was the next iteration).

Sure enough, as people played around with this new technology in the early 1980s, cinema did go through a slump.

A battle was also raging between Sony's Betamax system and JVC's VHS (Video Home System), but that's another story...

Today, however, cinema has never been stronger. As you read this, there are probably another 400-cinema multiplex being built at your local shopping centre.

Post offices persevere

When the fax machine came on the scene (I remember that too, I must be 100 years old), the doomsayers predicted the end of the postal system.

"Why send a letter when you can fax someone? No more walks to the letter box, or endless post office queues."

Well, the post office is doing very well, thankyou, as we get closer to the end of this century.

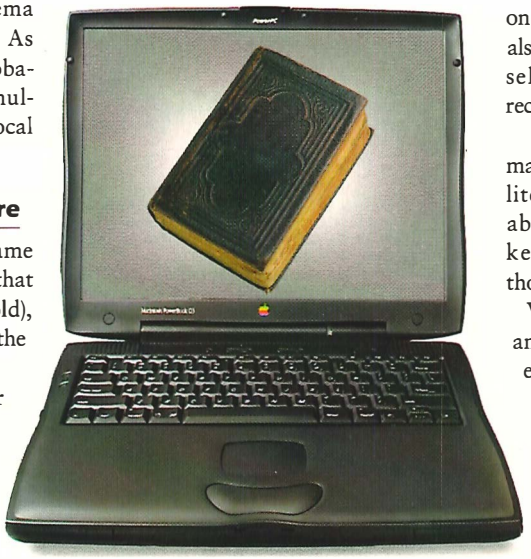
Something as quaint, simple, old fashioned and low tech as the humble stamp has survived the ravages of the fax and more recently email.

The post offices had to work a little harder, however, and think more creatively about their products and services.

I'm sure, dear reader, that in the past seven days you have indeed been to a post office, mailed a letter, or both.

Computer games don't have a monopoly

There are many other examples. Computer games would lead to the end of board games, as children gathered in front of monitors. There are obsessed gamers out there, but other pursuits—including boards games such Monopoly—have survived, even in their latest guise as Star Wars Monopoly. "I'll take Park Lane, Chewy, and may the Rent be with you."



Literacy will do more than just linger

I am pleased that there was one other area the doomsayers were also mistaken about, and that was the end of literacy.

It was predicted that computers would lead to a drop in literacy standards, that we would simply point and click our way to oblivion. Books were also going to disappear because you could read text on a notebook computer.

Ever lugged a laptop into the loo? Ever tried to read your favourite on a beach via your active-matrix display? Books in some shape or form are here to stay.

Bookshops are sprouting up everywhere. Melbourne even boasts a vast Borders bookstore, the first of the big US chains to arrive on our shores. Amazon.com is also doing legendary business selling books, and more recently music, online.

I think with so much information out there we need to be literate and highly selective about what we read (please keep reading the SoapBox though).

We read manuals, magazines and product reviews. Today, email has made writers and correspondents of us all. Before email I rarely wrote to anybody. Now I write daily. I'm sure it's the same for you.

As technology advances, and we trade in our keyboards for speech recognition, we'll also become Great Dictators. Will we lose the art of writing? Will speech recognition do to our literacy skills what calculators did to our numeracy skills? Why make the effort to count and calculate when we can use our el cheapo calculators? Why bother writing when we can just talk?

Perhaps we will become better conversationalists, and learn how to think clearly and concisely. We are also reading more than ever—web content, manuals, even computer magazines! The written word won't become redundant, but perhaps the act of writing as we currently experience it will.

Punters will always make prediction, but the truth is we don't know what's around the corner. The next awesome breakthrough technology could come from so far out of left field that nobody sees it coming. It may revolutionise our lives as the personal computer did almost two decades ago.

PHOTOGRAPHY: APPLE COMPUTER AND PHOTODISC / IMAGE MANIPULATION: TIM McLARE